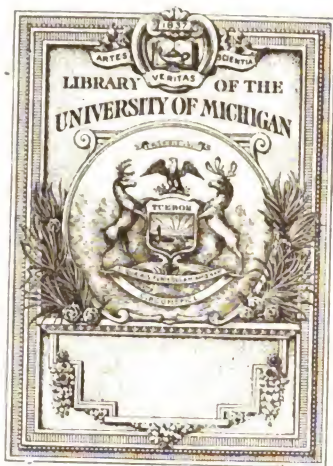




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AMERICAN PHYSICAL EDUCATION REVIEW

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JAMES HUFF McCURDY, M.D., Editor

FOR

THE AMERICAN PHYSICAL EDUCATION ASSOCIATION

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AMERICAN PHYSICAL EDUCATION REVIEW

JAMES HUFF MCCURDY, M. D., *Editor*

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THE SAFEGUARDING AND CARE OF THE INDOOR SWIMMING POOL.*

ARTHUR MORTON CRANE, NEW YORK CITY.

In advocating swimming pools or plunge baths, we must be alive to their dangers and ready to point out the safeguards. During the past year there have appeared newspaper and magazine articles tending to discourage the swimming pool on the ground that it is a medium for the transmission of intestinal, glandular and skin diseases. These articles emphasize the danger but say little about the prevention. Then, quite recently, we read of a case of drowning owing to the bather being taken with cramp and sinking out of sight of his companions only a few feet away, drowning without their knowledge. There are several fatalities of this character on record attributable to muddy and opaque water; contributed to, perhaps, by poor light. Every little while we hear of some learner venturing in without any companion or when no attendant is present. There have been several fatalities caused by bathers diving head first into an empty pool. In one instance at least, this was because the water in the pool was usually so clear as to be scarcely visible in the dim light when quiescent. In one instance the room was filled with steam from the showers which were in the same room as the pool, and this prevented the victim noting the absence of water in the pool. And then we hear of collisions with steps and life rails. We have mentioned only actualities, but other possibilities will suggest themselves.

Obviously the hygienic aspect of the matter is of the greatest importance; so let us first consider this. The paramount requirement is *pure* water; not only for safety, but for attractiveness. If we build pools, we want them used to their fullest capacity. If the water is impure, discolored, odorous, it will appeal to few beyond the age or class of those who still enjoy a plunge off the

*Presented at a meeting of the American Association for Promoting Hygiene and Public Baths.

city docks. A supply of bright, clear and pure artesian well water is much to be desired. Where this is not available, the municipal supply must be depended upon, and this should be filtered. The water, whatever the source of supply, should be flowing into the pool constantly while in use. It is commonly said that the water supplied to the pool should be in the proportion of twenty-five gallons to each bather. This means that after 2000 bathers have used a 50,000 gallon pool the water should be renewed. If the water is supplied constantly and the bathers average thirty per hour, this would indicate a flow of 750 gallons per hour. Unless water and heat are to be had free of cost, to maintain a renewal to this extent is sometimes prohibitive. This has led to methods of purification. The two principal methods of purification are by filtration and by the treatment with hypochlorite of calcium. Most excellent results have been obtained by each. It is beyond the scope of this paper to go into a detailed description of the processes. We are concerned rather with the results. Suffice to say that filtration is a straining process, fittingly termed: "Man's imitation of nature in the purification of water"; while the hypochlorite of lime treatment is germicidal in its effect. Hypochlorite of lime kills bacteria; but filtration removes them along with the other foreign matter.

To distinguish constant or repeated filtration from the mere filtering of the water as it enters the pool, it is termed refiltration. Essentially it means nothing more than circulating the pool water through a filter.

Refiltration as the means of purification has been employed quite extensively in the public baths abroad and in Y. M. C. A. and other institutional pools in America. Some examples of the results are here cited.

At the Hamburg Baths extensive "tests led to the conclusion that tank water, if filtered continuously on plain sand filters, can be kept hygienically clean for three weeks."

In the Bermondsey Public Baths, London, the physical appearance of the water was satisfactory after nine months use "and both chemical and bacterial analyses also indicate that the filters and aerators keep the water in good shape."

In Belfast, refiltration and aeration have been so effective that the only new water added in seventeen months was merely the comparatively small amount necessary to make up the natural loss; and all the analyses proved the entire absence of microbes.

At the Rotherite Baths the same process has purified the water so that it is renewed only twice during the summer and once during the winter.

A late Consular Report from Dresden tells of a portable swimming pool, a feature of which is the refiltration of water. This report is very definite and conclusive. It says: "The most recent examinations of the water so filtered have proven that constant

purification has so reduced the number of germs that it contains less than the water freshly introduced."

The Twenty-third Street Y. M. C. A., New York, has a 55,000 gallon pool used by 2500 bathers weekly, and at the end of a week's use analysis showed the presence of only forty bacteria per c.c. and no *B. coli*. Out of seven pools listed by Manheimer, this pool showed the best condition and the entire absence of intestinal bacteria.

The Kansas City Y. W. C. A. refilter their 38,000 gallon pool used by 1000 bathers weekly; the city chemist examined the water and analyses showed it "crystal clear, clean and pure, containing only a few bacteria per c.c.—purer than water drawn from the faucet."

The Washington Heights Y. M. C. A., New York City, summarize their results as follows: "A sample of water from our pool, after having been in four weeks, was analyzed at the Lederle Laboratory and found to contain only one thirtieth as many micro-organisms per c.c. as water from the main unfiltered. No injurious organisms were found."

At the Pawtucket, R. I., Y. M. C. A., experiments by the State Board of Health report entire satisfaction as to the sanitary condition of the water after seven and eleven weeks' use.

The Brockton, Mass., Y. M. C. A. refill their pool only once in three weeks and they claim that their pool is 25 per cent cleaner than the water used in Brockton homes.

The Y. M. C. A., Chester, Pa., depend altogether on refiltration and empty their pool only once in six weeks; yet they have clear water all the time, testing about ten bacteria per c.c., which is lower than the filtered city water supplied for domestic use.

The Lurline Baths, No. 1, San Francisco, maintain their 325,000 gallon pool at a temperature of eighty degrees, using ocean water, and by employing refiltration keep the bacteria down to about one half of the number in the raw water.

The Kansas State Normal School at Emporia, Kansas, employ both refiltration and the hypochlorite of lime treatment which maintains the pool 94 to 99 per cent pure.

The Pratt Natatorium, Amherst College, Amherst, Mass., has not been emptied for over three years, and yet recent bacteriological examinations show this water perfectly safe. This pool contains 75,000 gallons of water and is used by about eighty male students daily. Refiltration is employed six to eight hours per day and six tenths of a pound of hypochlorite of lime added two or three times a week.

However, it is only fair to point out that while many of the reports from pools where refiltration only is employed indicate high bacteriological efficiency, this cannot reasonably be expected so confidently as if the hypochlorite of lime treatment also were used. While it is quite possible to operate a mechanical filter so

as to deliver at the outlet of the filter a water pure to the degree demanded by health authorities for drinking water, and a pool could, therefore, be filled with pure water, yet the first individual entering the pool would contaminate it; and while the filter could always be operated so that the water would always be pure, the full effect of this would be lost as soon as the water mixed with the other water in the pool which had already been contaminated. Therefore, refiltration from a sanitary standpoint should be relied upon to merely reduce, and not absolutely eliminate the bacterial content of the pool, and this has in many instances been found sufficient. Lately, as an additional safeguard, the hypochlorite of lime treatment has come into quite general use. In fact in many pools this alone is depended upon, and the results, so far as the sterilization is concerned, have been most satisfactory.

So much has been published on this subject that it seems unnecessary to go into details here. The consensus of experience is that by the proper use of this treatment the pool water even though highly contaminated may be made absolutely sterile. The amount of hypo used, the method and frequency of application, vary. The average amount is probably one half part per million parts. Ordinary commercial hypochlorite of lime contains about 30 per cent available chlorine. This means that ten pounds will treat one million gallons. On this basis, a 100,000 gallon pool requires only one pound per treatment.

So far, the method of application has usually been by the rather primitive means of sprinkling the powder over the surface of the pool, or trailing it in a bag through the pool, or simply mixing up a pailful and casting it into the pool. But some of the larger pools are now adopting mechanical feeding devices, capable of exact adjustment—the same apparatus as now quite generally used in the treatment of municipal water supplies.

The frequency of treatment has varied from once a day to once in three days. The average seems to be two or three times per week.

It does not appear, however, that this treatment materially lengthens the time that the pool may be used without a change of water. Even pools so sterilized are refilled once a day or once a week, as is the practice when and where the treatment is not employed.

From all the information received to date, it seems that refiltration and the hypochlorite of lime treatment should go hand in hand. This joint use of the two methods of purification was definitely recommended by F. D. Stricker, M. D., at the Health Officers' Conference out in Portland, Oregon, early in April.

Wallace A. Manheimer, M. A., of the Department of Bacteriology, Columbia University, who recently made inquiry into conditions of thirty-five pools in the vicinity of New York, states under date of April 12, 1913, as follows:

"In regard to the data on refiltration, I will say that I have not completed my examinations but have formed some very definite notions as to its value. Though I do not consider that refiltration by itself is a sufficient sanitary precaution in pools that are used over three days without change of water, I do feel strongly impressed with its service in any pool in conjunction with additional sanitary precautions. That is, I believe that in addition to dilution of the water by fresh supply and sterilization by the use of chemicals, particularly calcium hypochlorite, etc., refiltration cannot be dispensed with in pools that are used more than three days without complete change of water. I feel perfectly safe at this stage of my work, in highly recommending the installation of refiltration in any pool where the expense of replenishing the water is great, or in any pool in which the original filtration is not effective in clarifying the water, or in any pool in which the water is to be retained for four or more days; but I would not want this statement to be construed that I believe that refiltration, though effective in clarifying the water, is a sufficient sanitary precaution. It is an adjunct, not only for cleanliness, but for safety—safety in preventing drowning and in promoting cleanliness."

The precautions which we have been considering are inexpensive. Hypochlorite of lime costs about two cents per pound. We have seen that one pound will treat a 100,000 gallon pool. This means that a pool of this size may be given a daily treatment at an annual cost of \$7.30. As little as this seems, refiltration costs even less; in fact, it costs nothing; and furthermore, saves money for the institution employing this process. Obviously, there is some saving in the cost of water if the same water be used for weeks or months without change; but this might be offset by the cost of pumping the water for refiltration; although statistics in hand do not show this to be the average condition. The great economy is in fuel. Reports show that the average amount of coal required to heat a 100,000 gallon pool to the temperature usually maintained in public baths is two tons. Even were the pool emptied only once a week, this would require 104 tons of coal per year. You have seen that by means of refiltration the initial supply of water has been maintained in a satisfactory condition and used for periods varying from one month to three years. Making an ultra-conservative estimate we might figure on emptying the pool once a month, or twelve times a year, thus requiring only twenty-four tons of coal as against the 104 tons required for this 100,000 gallon pool if refiltration be not employed. The saving will pay for a refiltration plant for the average 100,000 gallon pool in two or three years.

Now that we have seen how to purify the water, let us consider some methods of preventing its contamination. First we must supervise the bathers. A medical examination of each bather would be the ideal; but to enforce this would repel many. How-

ever, a thorough scrubbing with soap can be insisted upon. The latest Y. M. C. A. idea is to have the showers located in a room through which the bathers must pass in order to get into the pool. It has been suggested that other toilet facilities be also in evidence. Little or no clothing is now the rule. Strange as it may seem, the places most lax in this regard are those where the enforcement of it is of the most importance. In our best clubs and Y. M. C. A. pools, no clothing is the rule. In our public baths, open to all sorts and conditions of men, the variety of attire rivals a second-hand clothing shop. Certainly if clothing is worn, it should be the property of the institution and sterilized after each use.

It is going to take years of education to stop expectoration, and so the overflow trough should be a part of every pool; and as a matter of fact in most of the new pools the overflow trough is taking the place of the cuspidors formerly only too seldom provided. The overflow trough can be also adapted to the draining of the floor surrounding the pool, so that dirt from the footwear of the onlookers will not be carried into the pool. Logically, it would be better to have a visitors' gallery on the floor above. The modern overflow trough prevents the unsightly accumulation of dirt caused by the lapping of the water on the sides of the pool at the water line; for the floating impurities are carried off into the gutter by the splashing of the bathers. This may be assisted by a skimming nozzle, which may serve also to provide aëration by spraying the inflowing water into the pool, and may be used to wash the bottom of the pool.

The scum gutter serves also as a life rail, taking the place of the crude looking ropes and obstructive pipe rails. The latest idea is to have the ladder also recessed in the wall; the whole effort being to keep all obstructions out of the pool. For this reason we now only rarely see heating and supply pipes in the pool.

In order to give this conference a comprehensive view of the swimming pool situation in America, a questionnaire of forty-seven questions was sent to 540 pools; to this 272 responses have been received. The reports show great interest in the subject. In fact, the information received is so voluminous that it is impossible to present it in detail at this time, but it may be summarized as follows:

The 272 pools under consideration are classified as follows: Y. M. C. A., 205; Y. W. C. A., 4; educational institutions, 31; public baths, 11; clubs, 6; business establishments (hotels, Turkish baths, etc.), 11; private residences, 4.

In shape, 236 out of 250 are rectangular; the dimensions varying from 20 feet by 10 feet to 140 feet by 65 feet. The so-called "standard" Y. M. C. A. pool is 20 feet by 60 feet in area; the rules of the Amateur Athletic Union requiring swimming records

to be made in a pool "not less than 60 feet in length." The old "breast stroke" now being obsolete, 20 feet is considered ample for 4 swimmers abreast. It appears, however, that where water-polo is in vogue the pools are usually at least 75 feet in length, 25 feet by 75 feet being a favorite dimension.

The average capacity of 214 pools is approximately 50,000 gallons; this approximately representing the aforementioned "standard" Y. M. C. A. pool.

Out of 262 pools, 179 receive direct sunlight from either skylight or windows.

The temperature maintained varies from 50 degrees to 90 degrees; the average for 239 pools being $73\frac{1}{2}$ degrees.

In precautionary measures there is a wide variation. Of 164 pools where neither refiltration nor chemical disinfection is employed, only 6 pools refill daily, 23 thrice a week, 29 semi-weekly, and 3 every 5 days; while 50 per cent, or 82 pools, refill weekly. Eleven pools retain the water for 10 days, 8 for 2 weeks, and one pool for a whole month. However, 141 pools add some water daily; 86 out of 251, or approximately one-third, maintaining a constant overflow.

About one-third of the total number reporting, namely, 84 pools, start right by filtering the water before it enters the pool; and 54 continue the good work by refiltration. In addition to refiltration, 17 out of the 54 use also the hypochlorite of lime treatment; 2 others use sulphate of copper as an algæcide and yet 2 others employ all three methods. Only 29 of the pools depend altogether on the hypo treatment; and only 11 pools employ aëration as an aid to purification.

Of those pools employing refiltration, 40 maintain the circulation whilst the water is in a state of agitation owing to the presence of bathers in the pool; and the average length of time refiltration is employed is $10\frac{1}{2}$ hours per day.

Out of 77 pools, 56 do not filter the water until after it is heated, 22 out of 39 refilter it before reheating.

Out of 255 pools, 150 report overflow troughs.

To prevent contamination of the pool, 149 require a shower bath before entering the pool, 90 of these stipulate the use of soap and 27 provide supervision to insure obedience to the rules in this regard.

In 162 out of 203 pools, no clothing is permitted; whilst in 41 pools it is required.

Summing up, it would seem that we may well profit by the experience crystallized in the information which has just been presented and safeguard our pools from the dangers which confront us by urging the adoption of a few basic principles. Therefore, the following are suggested.

1. Maintain the water in the pool pure and clear; employing both refiltration and chemical disinfection.
2. Have the pool well lighted; natural light by day—sunlight when possible.
3. Keep an attendant always on duty when the pool is in use; prohibit admission at other times; allow no one to enter the pool alone.
4. Maintain a strict supervision of the bathers, medical examination if practicable; preventing persons with communicable diseases from entering the pool.
5. Enforce the scrubbing of each bather before entering pool.
6. Prevent all clothing or provide sterilized clothing.
7. Surround the pool with an overflow trough and prevent expectoration in or about the pool.
8. Prevent visitors carrying dirt and disease germs on their footwear into the pool room.
9. Do not have any obstruction in the pool, nor along the edge of the pool, nor adjacent to the pool.

SWIMMING POOLS AND THEIR PURIFICATION.*

F. D. STRICKER, M. D., GRANTS PASS, ORE.

The Romans, in their efforts to keep their bodies in a well and fit condition, appreciated the benefits to be derived from frequent physical exercise and bathing. They took great interest in wrestling, boxing and handball. Their exercises consisted of throwing the discus or javelin, running races, practicing jumping and lifting large metal dumb-bells. Having taken sufficient exercise they were rubbed with unguents. They then took a sweat, followed by a hot bath, and then indulged in a plunge in the *piscinæ*, or swimming pool.

The first swimming pool was probably a reservoir between the Aventine and Cælian Hills in Rome. This was dedicated to the people for bathing purposes about 154 B. C. The popularity of bathing must have gradually become general, for five centuries later we learn that there were nine hundred and fifty-two small bathing places and twelve large *thermæ* as they were called, in the city of Rome. The smallest one, that of Titus, was 390 by 341 feet and the largest that of Diocletian, 1333 by 1300 feet, with accommodations for three thousand people.

The public baths were open to all and the charge was a quadran, or about one cent. An emperor would often declare the baths free in order to increase his popularity with the people. The restrictions were few, if any. Lepers and those with visible signs of disease were excluded and compelled to use private baths provided for them. The pools were supplied with running water from the aqueducts.

In modern times we find the custom of physical exercise still in popular favor. The gymnasia of athletic clubs, Y. M. C. A.'s and educational institutions have their swimming pools. A few public baths have been established, but they are not general at the present time.

The swimming pool in this country is constructed of concrete, tiling or marble and is usually located in the basement of the building. Water is taken directly from the mains and often to begin with this water comes from a contaminated source. The usual custom is to fill the tank on Monday and empty it late Saturday night. In some cases it is given a thorough scrub before refilling, but more often the débris is either shoveled or scraped out and let go in that manner.

Running water would be ideal, but the cost of refilling and reheating is prohibitive. For the greater part of the year it is

*Presented at a Health Officers' Conference, Portland, Ore.

necessary to heat the water to about 70 or 80 degrees Fahrenheit. This temperature of course favors the growth of bacteria, especially the pathogenic varieties.

Most institutions require a preliminary shower and some a soap and water scrub before entering the pool. As you all know, if a person were "scrubbed to the bone" he would still harbor a great number of germs. But there is no doubt that if the preliminary bath were more conscientiously attended to, pollution of the pool would not take place so quickly. After several days usage, the water in the tank takes on an inky hue and there is a considerable amount of debris consisting of hair, epidermis, etc.

The unsanitary state of the majority of swimming pools has prompted an investigation by sanitary experts. Lyster, Ravenal, Porter and others have made bacteriological examinations and a state of contamination has been found to exist that is almost unbelievable. Porter has called them "cesspools." Further examination showed that the bacteria content increased according to the number of bathers until a maximum point was reached, when the number was considerably diminished. A daily examination revealed the fact that the number of bacteria increased daily until about the middle of the week and then decreased in number until Saturday, when on account of the large number of bathers there was an enormous increase again. It seems that the bacteria develop to the state of saturation when they are destroyed on the principle of a septic tank. As many as 630,000 colonies have developed from one centimeter of water taken from a swimming pool. In some of the examinations the *B. coli* has been found in as small a quantity as one-tenth of a centimeter of the water.

Chemical analyses also show a corresponding increase in the amount of organic substances present.

Bacteriological examinations have been made of the swimming pools in Portland where we have an unquestioned water supply. They have all been found to be enormously contaminated with one exception.

That bathing in water that has been contaminated to such an extent should cause infection is not surprising. The use of typhoid infected water has caused several epidemics. The danger of a typhoid carrier bathing in a swimming pool has also been noted. Epidemics of skin diseases, conjunctivitis, ear, throat, intestinal and venereal diseases have been traced to swimming pools.

The extremely filthy condition of these swimming pools belongs to the days of ignorance of all sanitary laws and they are a menace to the public health like the outhouses which have been condemned to oblivion by every self-respecting municipality.

Sanitary engineers have been successful in treating water which was practically sewage and making it potable, as was

done at Boontown and the Chicago Stock Yards. While I do not venture to say that this treated water is as good or equal to natural water from an uncontaminated source, it certainly has made many a dangerous drinking water safe.

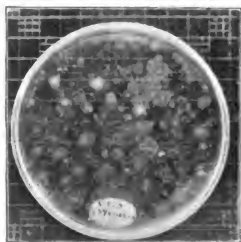
There is no doubt that the swimming pool as it is ordinarily conducted is capable of spreading infection and should be under the direct supervision of the board of health. Frequent examinations of the pools should be made. The health officer should lend his assistance in the installation of apparatus for the purification and sterilization of the contaminated pools. Laws should be enacted requiring the authorities to keep the baths in a sanitary condition. There is no reason at the present time why all baths cannot be kept in a sanitary condition.

Lime hypochlorite in very weak solutions has been proven to be a cheap and efficient germicide. It has been used in treating water for drinking purposes for several years and no harmful effects have been detected. Water from contaminated sources can be made almost sterile by the use of the lime hypochlorite.

The old style antiquated pool may be kept in a fair condition by having a barrel of the solution of lime hypochlorite at hand. This solution is made by dissolving from two to sixteen pounds of the hypochlorite in a barrel of water. A pail of the supernatant solution is thrown into the pool daily. This is very effective in reducing the number of bacteria, but has no effect on clearing the water.

Clear, transparent water can be obtained by a process of pumping and filtration. Clear water is not only desirable from an æsthetic standpoint but also for the safety to life. Bathers have been drowned in murky pools. On account of the turbidity of the water they were not discovered until it was too late to resuscitate them.

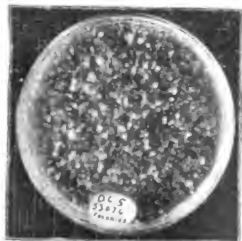
The modern sanitary swimming pool is equipped with a pump. This pump should be of the centrifugal type so that all solid matter can be pumped from the pool through a filter. A filtration system is absolutely necessary to free the water of its pollution. On account of the limited space it is necessary to use a mechanical filter of the pressure type. In a filter of this type the water is pumped through a solution of alum which forms a coagulum with the impurities in the water. This solution and coagulum is then forced through the filtration tank. This tank is filled with sand and in the lower part of the filter there is a series of cast bronze strainers. This filter removes all coloring matter from the water and from 95 to 99 per cent of the bacteria are removed. This filter is cleansed by reversing the current of water for ten minutes daily and the impurities drain into the sewer.



1. UNFILTERED WATER.



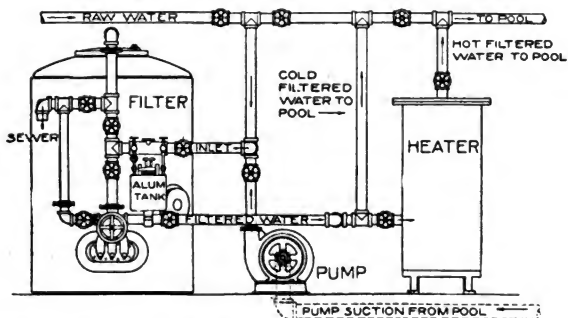
2. FILTERED WATER.



3. REFUSE FROM FILTER.

These photographs show the possibilities of filtration even without the hypochlorite of lime treatment. Plate No. 1 shows an unfiltered water containing 1189 colonies of bacteria per c. c. Plate No. 2 shows the same water after filtration through a mechanical filter using alum as a coagulant. The bacteria have been reduced to 15 per c. c.—a removal of approximately 99 per cent. Plate No. 3 shows the waste water from the filter containing 53,076 per c. c.

To complete the efficiency of the filter the water may be further treated with the hypochlorite process. The apparatus consists of a mixing box, a storage tank and an orifice regulating tank. As the hypochlorite is very active in a clear solution, it is only necessary to use a weak solution. This solution flows into the water as it enters the pool. Not only is the water sterile but it also has the tendency to keep it so.



APPROXIMATE LAY OUT FOR THE RE-FILTRATION OF A SWIMMING POOL

Conclusion.

There is no doubt that swimming pools can be maintained in a sanitary condition and it only remains for every health board to enforce this standard.

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SWIMMING IN THE ELEMENTARY SCHOOLS.

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Since a recent magazine published the results I attained in the swimming pool during the last year at the Carter Practice School, I have had numerous inquiries as to the method used in teaching such large numbers in such a comparatively short space of time. I think everything has a bearing on the results, even to the construction of the swimming pool, and it is, therefore, my object to give each subject as concise a consideration as necessary in such a short article, to answer in a way the call for such information.

No doubt there will be some readers who will not consider it very scientific, but you must keep in mind the age of the pupils dealt with, which makes the work of a psychological nature rather than a scientific one.

There is the one "stumbling block" to all teachers, viz., the "animal spirit" of a boy, and were it not for this one thing, all teachers would agree that a boy could easily become an angel. At no place does this spirit crop out so prominently as in a swimming pool, where the freedom from mental worries allows all that pent-up energy to remove itself in a series of the strangest and most unlooked-for antics imaginable. A boy will come into the swimming pool "full tilt," bang a lot of locker doors, feel if the water is warm and splash someone before he ever thinks of undressing, and he does it all unconsciously, for if you ask him a few minutes later what he did on entering the pool he is unable to tell you. This is an exuberance in the typical boy which cannot be quelled by any amount of punishment. In fact, to teachers well versed in psychology, the removal of this surplus energy through natural means is what is needed to make a better boy in the classroom.

I kept this "animal spirit" ever before me in studying the question, and came to the conclusion that it was better to make use of this exuberance and direct it along my own line of teaching rather than try to quell it and then teach only the stiff and staid old stroke handed down from our forefathers. The first thing I did was to remove everything from the swimming pool that might be a temptation to the mischievous ones, making the lockers non-communicable either top or bottom. This does away with a boy's greatest ambition, viz., to hit another boy in the next locker, by throwing over his wet towel, shoes, etc., while dressing. If you have a voice in the building of a pool, have the windows and necessary ledges removed far enough

from the edge of the pool so as not to be accessible for a dive. If the windows are close to the pool, screen them, as there is sure to be a fatality some time or other by some boy trying to do what he sees another one do, while he is not far enough advanced. Another usual source of annoyance to an instructor is the fooling in the shower bath, which can easily be remedied by a contrivance which will pull the handles of the showers out of reach after all have had a bath.

This brings me to another point. Under no circumstances accept a "knob shower" for an elementary pool; have a tank which mixes the water to the right temperature which can then be drawn from the shower by the pulling of a chain.

The average pool for a twenty-five room school should be 20 by 40 feet, and the bottom graduated from three to six feet, while a forty or fifty room school should have a pool 25 by 60 feet, graduated from three to seven feet, as it will be necessary to take two rooms at once into the pool and the extra ten feet will give more room at the shallow end until the pupils learn to swim. Two ladders should be placed at the deep end and one at the shallow end, which is usually reversed by the architects of to-day. The temperature of the water for boys should be 76 degrees and the air the same. There should also be a toilet and a water fountain in the room.

We are now ready for the first class, which should not exceed twenty-five, but if there is room, forty will not be too many. Rather than obey a lot of rules, a boy will try to see how many rules he can break without the instructor's knowledge, even if the chances are large at his being caught, and the punishment is great. By keeping this in mind and removing the temptations, you get a "minimum of waste and a maximum of results."

The first question to arise is—Should the boys be required to wear swimming suits? I say, no, and the objections are:

First—The boys' parents may be poor and cannot afford to buy a suit, which the boy will outgrow in a year.

Second—A suit if bought would be of the cheapest kind, which easily loses its color, the dye not only coloring the boy but the water, making it dangerous to others through its poisonous properties. I have seen three suits convert a clean pool into an indigo blue, and the next time they entered they repeated the performance.

Third—The question of suits would surely be overruled when you keep this "animal spirit," in mind, for show me a normal boy who would not snap a wet suit over the bare back if he "half" saw the chance.

Fourth—The carrying of wet suits the remainder of the day, as there is no practical device known for drying them in a short space of time.

By those in favor of suits the moral side is put forth as an argument, but having dealt with boys under both conditions, and on questioning others, we came to the conclusion there was no difference in conduct toward each other, suits or no suits. One objection is that visitors must be excluded, but the achievements of the boys at this age are not such as would interest visitors, hence nothing is lost by their absence.

With your group of boys before you, have each give his note from his parents or guardian, giving him permission to enter the pool and ask if there is any heart trouble. With the medical inspection lately instituted in our schools such cases are found, the boy made acquainted with it and they will tell you this, making it a waste of time to examine hundreds of children to detect one or two heart cases which could easily be found by asking them at this time. The heart cases can then be examined at leisure and the degree of exercise determined, as there are very few cases of heart trouble that are not amenable to treatment through swimming.

Have the lockers numbered and assign each boy to a locker and instruct him to take it every time. This will prevent confusion in the future periods. As an incentive to get them into their lockers and undress quickly, I tell them that the first boy in the shower bath will be the rear guard on the march back to their room after the swim. It is surprising how quickly they forget to trip and splash one another in their endeavor to be first undressed. This is energy turned in the right direction, as they think it a great honor to be the last one in line to keep the others in place on the march back. After the shower, line them all up, leaving plenty of elbow room so that they can practice the arm stroke. While here in full view of the pool tell them which is the shallow and deep end and the rules which I have "boiled down" to three at the present time.

First—Keep in the shallow water with the wings until passing examination for the deep part.

Second—No wings allowed in the deep part even by the best swimmers.

Third—Be gentlemanly in conduct; finish by saying, It is not gentlemanly to push one another into the tank or do a lot of splashing. Such rules as "no diving from windows and chairs," "no showers after the first one," etc., are not needed, because you removed the objection, and you now have your boys where they can only spend their energies in one direction, viz., to get in the swimming pool, learn to swim and then *swim*.

THE ARM STROKE.

The stroke which yields such good results is a modification of the Australian crawl, modified to the needs of the average

eight to fourteen-year-old boy. It is the simplest and most natural way for the boy, at the same time allowing ample opportunity for him to work off his pent-up surplus energy. This eventually leads to the perfected "crawl," which is the fastest stroke known. The class lined up should bend forward at the waist till their trunks are horizontal. Extend the left arm slightly bent at the elbow, palm down, fingers together. Right hand should be on the hip, and the head turned to the left. This is the starting position. Now instruct them to drop the left arm in a sweeping motion while the right one leaves the hip, circles from the rear over the head to the front to the reverse of the starting position. The head should be turned to the right during the carrying of the right arm to the front. The left hand should be opposite the hip. Repeat the stroke, right arm dropping and raising left arm over head from rear, head to the left to the starting position. Take this slowly at first till they get this "wind-mill" type, correcting all faults, the chief ones being the forgetting of turning the head and the bringing of the arms high enough overhead. A straight arm is to be corrected above all, as it causes all the splashing seen in some instances, greatly retarding their learning. It is often necessary to stand behind them and help them get the alternate arm motion correct before letting them in the water, as half your battle is won right on land in the first lesson if you drill them properly and sufficiently in the perfection of the arm stroke. Raising of arm lifts shoulder out of the water, hence speed and less liability for feet to touch bottom.

Next give them each a pair of water wings and instruct them to place them around their waist and never under the arms. To tell them "never under the arms" now, will save your voice from telling it to each one individually later when all kinds of noise is proceeding from the pool, as they invariably allow them to slip under the arms unless told otherwise. If you have a beginners' class, here is where you have to be the most careful regarding fatalities. It is quite a task to get them to lie properly on the wings. It is a new sensation to lie on a pair of wings, without their feet touching the bottom and I have tried several ways of correcting this tendency and about the best two are the following: Either have them get on their knees, and start their arm stroke from there, or stick a pole in front of them and tell them to lie on the pole and then gradually lower the pole till they are horizontal in the water and the wings support them. Even when on the wings, you have to keep an eye on them as they turn over on their back, the wings slip away and they go under, and a beginner on his back in shallow water is liable to drown if not rescued, as he cannot regain his feet on account of the glazed tile on the bottom of the pool. I have rescued a five-foot boy several times who always had a tendency to turn on his back,

lose his wings and go under in three feet of water. It is best not to let any child get a bad scare in this manner as it means a greater effort on his part to learn later on. Once they have the confidence in the water and know the wings will keep them up, you can safely say they will be able to swim at the end of the third lesson. In teaching swimming you must overcome the fear of the water in pupils, which is an instinct born in them, and no amount of forcing will get them to lie on the wings, but the greatest patience is necessary on the part of the instructor. In almost every class I have one or two whom I could not get on the wings to begin with; then, the first thing I knew they were swimming, having done so without my assistance. There are some boys termed "backward," or self-conscious, and as soon as the attention of others is centered upon them, lose all self-control and cannot do a thing. Such boys are better left alone and when nobody is looking they will be found in a corner gradually trying out the instructions and gaining their own confidence. During the first lesson it is well not to give too many wings to the class as you cannot watch them sufficiently.

When lower grade rooms are in the pool, it is well to let out some of the water. Once on the wings, have them continually practice the arm stroke; their frequent mistakes are in not getting the arm high enough out of the water in bringing it forward, they easily forget to turn their head while the arm comes overhead, and they do not close their fingers. This is not tiresome, and they will continue to practice the stroke a full half hour without the exhaustion noticed in one half hour gymnasium work. The half hour seems so short to them that the retiring whistle brings a storm of protest, so I now blow a whistle five minutes before they are to leave and a one-minute whistle before the whistle of "All out." This in a way prepares their minds toward the leaving and they will start doing stunts, etc., so by the time of the "All out" call they leave quickly without any trouble. I absolutely do not allow a shower after their swim, as the swim is equal to the cold shower taken after a hot bath and therefore is unnecessary and prevents a lot of fooling in the shower baths. I make it a rule that each boy must be dressed and in line in fifteen minutes and if such is not the case, take note of the overtime and take it from their next swim. There are some boys who cannot dress in fifteen minutes and the other boys, knowing it, chase the delinquent boy out at the five-minute whistle. In this way the boys become self-governing and seldom do I have to enforce the few laws.

After a thirty-minute swim, fifteen minutes is sufficient time to dress. If you notice any boys that are naturally dull and incoördinate, tell them to practice the stroke at home as "home work." The first time I told a boy to do this I was joking, but

the next time he came I noticed the improvement and on inquiring found out he had really practiced the stroke at home. Since then I give to every boy not getting it right in the water the stroke to practice at home, and some unlooked-for startling results have come to light, viz., the boys practicing at home interested the sisters, brothers and even parents who practiced the same arm motion and then applied it in the water, learning to swim correctly without an instructor, and it is true it can be learned by mail if the instructions are properly carried out.

A woman came to me the other day and told me of just such an incident. She had been taking lessons for eight years *via* the old route (breast stroke) and had not learned, till her son began his "home work," and at present she is able to swim 100 yards.

BREATHING.

Granting after the first lesson every boy can swim forty feet on the wings, the second lesson is spent in perfecting the breathing. This is usually a difficult task as it is the most unnatural. The starting position is assumed and the head while turned toward the left arm gulps the lungs full of air, then when the arms circle and the head turns to the right and return, the air is exhaled through the nostrils, again taking a mouth full of air on the left. The object of taking the breath under the left arm is because the right arm is stronger and in its downward motion through the water elevates the head more, giving more room for a better breath than over the weaker left one. Again, these combined breathing and arm motions are practiced in unison for one half hour,—great care being taken in criticising every mistake. If they do not get their arms out of the water now they certainly will not when the wings are taken from them and they will then execute the "doggie" which is of no consequence for speed, beauty or exercise.

THE LEG STROKE.

Now a great deal is asked about the leg stroke in this style, and it is all expressed in a few words. "Let the legs take care of themselves." It will be noticed that while practicing the arm motions, the legs will have a peculiar thrashing motion, which is decidedly different in every individual and is characteristic of that individual, and of which he is entirely unconscious. When the wings are removed this leg motion will be sufficient to keep the feet from touching bottom in three feet of water. Another factor is the speed of the arm stroke, making it impossible for the legs to sink, but trail in the rear. Of course for the correct Australian crawl, the leg motion is a thrashing motion in which

the knees bend slightly and the feet do not separate more than six or eight inches in their thrashing up and down, usually four times as fast as the arms, but again, it varies with the individual and there is no set rule.

REMOVING THE WINGS.

The beginning of the third lesson is on water wings, but after seeing that he has the stroke correctly, have the pupil squeeze one-half of the air from the wings and have him swim for awhile, then squeeze more and more until finally he is swimming with the empty water wings under him. It is peculiar to notice the confidence displayed in the water wings, for as soon as you remove the empty water wings he cannot swim. But remove them you must and keep them removed if you want to make your pupil a swimmer. There are a great many people who object to the use of wings and here lies the reason. Once the stroke is mastered, if the wings are kept on it does not develop confidence. Remove the wings as soon as he has mastered the stroke and breathing, and if he cannot swim at all or only swim ten feet without the wings, remove them, as it only requires practice to make perfect and usually it means the building up of the muscles necessary for the stroke which increases in proportion to the distance he practices for.

By the above method you can teach large numbers of boys to swim in a week, giving each boy three lessons, as is done by some teachers who travel about for just such purposes.

In Chicago during May week all the Young Men's Christian Associations employ instructors and open their tanks to the schoolboys for free lessons. At the West Side Y. M. C. A. where I conducted a campaign this year, I had several good assistants and at the end of the week the results were as follows:

Out of the 932 boys who took the three lessons—

37 per cent could swim 25 feet.

28 per cent could swim 50 feet.

14 per cent could swim 60 feet.

—
79 per cent—total.

I am sure such results could not be attained by any other method than by the modified Australian crawl.

THE SWIMMING STROKE THAT IS NATURAL FOR MAN.

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When the issue of *Mind and Body* for October, 1912, asked for the "results of experience" concerning swimming strokes and methods, I determined to test the matter by a series of practical experiments, long and comprehensive enough to be scientifically conclusive.

After fifteen years of teaching early in my experience in Minnesota, I received a rude shock on learning that any institution of learning was teaching the "dog paddle." There were in one institution some who took swimming, not from enthusiasm, but because of necessity, candidates for graduation being required to swim and carry a person his own weight twenty yards. So types of individuals were found that are not generally found in popular swimming resorts. Some students were, in their senior year, still trying to develop ability to "carry their man." Some had not learned to swim beyond a few feet, but all had developed habits detrimental to efficient swimming. A few would not put forth the effort to learn another stroke, but others qualified in spite of difficulties in from thirty to seventy days, working in good form in breast stroke.

Real breast stroke is little known, even by many teachers. More than one writer has not the a, b, c of it, and thousands of others, for the same reason, are ignorantly condemning it. Breast stroke, with its simplicity and ease of movement, is the most deeply scientific stroke known. The more it is studied and accurately practiced, the more this fact becomes apparent. Both psychologically and mechanically, it is the natural stroke for man, as the duck's stroke is for the duck. The claim that a person, not knowing how to swim, when pushed into the water will instantly start to swim "dog paddle," is from start to finish by scientific observation proven false. The motions seen are not the result of any effort to swim. In fact, there is no thought of swimming in the person's mind. On the contrary such a person becomes crazed with fear, the mind is possessed by a single thought which quickly becomes a mania; and the frantic motions are the result of this mania. The person is possessed by the thought of climbing out of the element feared, and the motions are climbing motions. How many I have drawn to the side of the pool and watched them climb out far more quickly than they were able to do when in their right mind; others, too weak to climb, hoarsely ejaculated, "Now take me out of here *quick!!!*"

Every teacher should, for he owes it to himself and his pupils,

thankfully and deeply ponder Dr. Knoch's story (given in *Mind and Body*, January, 1913). His experience with the "dog paddle" has been repeated many times last summer, too often fatally, in our own local lakes. Truly, the doctor speaks with authority and wisdom when he advisedly tells us to "*Teach a stroke worth while.*" Have we as teachers any real reason for teaching anything else? What profit or honor is there in giving a pupil a false confidence which will but lure him to his death? Is it not taking a wicked advantage of a pupil's lack of knowledge, yea, amounting to a murderous breach of confidence? I feel sure that misinformation and wrong belief are the only reasons why a single one of my fellow teachers has ever taught to beginners any other stroke than the one "Worth while."

I find pupils make more rapid and greater progress, that is, they actually accomplish more, in ten lessons of thorough scientific teaching of breast stroke than of any other. Follow this with the scissor and English rough water stroke, then the over-arm stroke. This conclusion is reached after a series of tests during the past year and some months. A single example will illustrate the results of the tests. Six persons were purposely selected, who represented all types of temperament found in this locality. One of the six learned to swim scissor stroke in fifteen personal lessons, another in twenty, and the rest changed to breast stroke. Set this record against that of another group of the same type of persons, in which all but two learned the breast stroke in ten lessons, one in twenty and one in twenty-five, and nearly all the lessons were given in *class instruction*. Mr. Allen is right when he says it is "reasonable to learn scissor stroke after breast stroke"; for in scissor stroke one has, though often unknown to himself, natural tendencies, which if known and followed, enable him to do better work than he otherwise could. As in using tools, a "right handed" person does better work with his right hand than with his left hand. The wise teacher readily discovers this "natural tendency" of the student while he is practicing breast stroke, and will instruct and train him in scissor stroke according to his "natural bent." I do not find these swimmers, some of whom in a few months swim a mile or more, refusing to learn other strokes, but on the contrary, they are keen to learn the racing strokes.

Not having the opportunity for months of drill before entering the water, as is possible with some others, I only use the upright land drill for a part of the first three lessons. I use for one lesson a stooped land drill for teaching details of the arm strokes; also I find land drills very helpful in teaching the English rough water and Australian crawl strokes.

From land drills I turned my attention to water drills and developed what I am pleased to call the

"SUSTAINING STROKE."

Members of the class take position in the water, standing on tip-toe, feet together, with the water up to the chin, arms extended to side horizontal, palms down. The hands are below the surface of the water and the back is perpendicular throughout the exercise.

Arm work, count one, the stroke:

Begin the stroke with a sharp downward beat of eight inches, and *at the same time* turn the hands to an angle of forty-five degrees to the surface of the water, thumbs high, and, bending the elbows, vigorously sweep the hands to the arm-pits. Keep the wrists, hands, fingers and forearms in a *straight line*. The upper arms are held high and nearly stationary, except the elbows are carried backward as the hands are brought to the arm-pits. The stroke must be made in direct line with the shoulders, and this backward movement of the elbows makes this possible.

Count two, the recovery:

Reverse the hands to forty-five degrees to the surface of the water, little fingers high, and sweep the hands to first position.

Leg work, count one, the recovery:

Raise the knees outward, spreading them as wide apart as possible, until the thighs are at right angles with the trunk, legs nearly perpendicular, feet flexed and turned toes outward.

Count two, the stroke:

With a *combined* stamping motion, slight spreading of the feet, and vigorous sweep of the limbs together, the leg drive is made downward in a direct line with the spinal column.

Notice that in the coordinated movement the knees are raised during the arm stroke, and the arms are extended during the leg stroke; and that the leg stroke used is that of regular breast stroke, while the arm stroke is the last half of the arm stroke used in breast stroke; but the two working in perfect breast stroke rhythm.

Usually the forearms, wrists and hands are held in a straight line about parallel with the surface; but by lowering the hands, bringing the forearms forty-five degrees to the surface during the stroke, the person is carried forward; the reverse carries the person backward: with this practice the students soon learn to keep balance. At first only one stroke at a time is made, the student coming to first position, resting the toes on the bottom; but coordination soon develops and he readily swims soon after he can sustain himself sufficiently to make two or more consecutive strokes in rhythm.

This is taught only as a class drill, and not only develops coordination but teaches the finish of the arm stroke; a finish seemingly universally ignored, but of great importance: for it

adds from eighteen inches to two feet or more to the distance traveled in one stroke, and uses no more energy than the balancing movement, or more often random swing, usually practiced.

Before adopting these class drills, I practiced a great deal of individual teaching, of which the following is a sample of the results: One hundred and forty-two students, made up of all types, ninety-eight learned to swim breast stroke in an average of ten lessons. Forty-four have difficulties classed as follows:

First, about 30 per cent, indisposition to make the effort necessary to learn a new stroke, "dog paddlers."

Second, about 10 per cent, hate the thought of water.

Third, about 10 per cent, abnormal fear of water and unbelief in their ability to learn.

Fourth, 50 per cent, inattention, inability to concentrate their minds on the work.

The difficulties were overcome in two or three months by all, except six of the first class, and one who was badly afflicted with both the second and third troubles; and he has since learned to swim and become very enthusiastic for the sport.

Because of class four I hold an illustrating swim and quiz. While a leader is swimming in perfect form, questions are asked of members of the class which readily bring out any inaccurate ideas which may be held, and giving opportunity for prompt correction. Also to avoid repetition all work is arranged and graded on an efficiency basis. Beginners' work is arranged in ten lessons with one week between lessons. Most gratifying results are obtained, as a single class record illustrates. The following is a showing at the end of ten regular lessons:

Regular attendants, 17; qualified for class "G" efficiency, 7; swam twenty feet, 4; swam thirty feet, 6.

As soon as students qualify for the efficiency classes, they are at once started on another series of lessons calculated to help them to become strong, enduring and intelligent swimmers, as our highest class indicates.

For instruction the work is divided into three grades, and includes various methods of rescue, the resuscitation and care of those apparently drowned.

While not following his plan exactly, I appreciate his work and most gratefully acknowledge my indebtedness to Mr. Gus Lindner for the suggestions of the efficiency classification.

The best result is the splendid enthusiasm pervading all classes from beginning to end. The weaker ones do not get a chance to get discouraged but are carried along by the contagious spirit of their companions. No form of apparatus is necessary, the leg stroke is taught while the students sustain themselves on the side lines of the pool. The following is the present outline of lessons.

Beginners.

1. General principles. Land drill.
2. Leg stroke, breath, control.
3. Floating, plunge, rest.
4. Sustaining stroke.
5. Swim, legs only, head down; head up.
6. Arm stroke.
7. Illustrating swim. Quiz.
8. Swim for form and distance with *rest*.
9. Back stroke.
10. Surface dive. Rescue work.

Eight of the lessons for beginners are largely class drills; one is a demonstration and quiz, and one is a demonstration and lecture. The above headings indicate only when a subject is presented. Some of the subjects are carried along as a part of several class sessions before being mastered.

By this system the discomfiture of the "Go as you please" way is removed; and with the same time and energy necessary to teach one, as many as the pool will accommodate can be instructed and accurately guided in their practice.

Some may ask what is meant by a swim with rest. If one cannot rest while swimming he will not swim very far. We are so constituted that a sustained effort must only be maintained momentarily, for it becomes a strain and causes trouble. In walking and running one limb rests while the other sustains the weight. In almost all of our work one set of muscles contracts, does the work, while the other is relaxed and resting. Beginners in swimming are apt to nervously hold all muscles tense and soon find themselves exhausted. Some strokes permit but very little if any rest. This is the curse of the "dog paddle." At the instant when the individual should be resting, an effort must be made, the whole tendency of which is to pull him under.

	Swim	Back Stroke	Dive for form Plain front and two others	Under-water swim	Salvage 10 lb. weights placed 5 ft. apart	Plunge for distance	Rescue and carry a person your own weight	Swim in coat, trousers and 2 lb. pair of shoes	Shed coat, trousers and shoes during a 30 yd. swim	Swim for form 40 yds. and do "the turn"
Senior Life Saver	440 yds. 10 minutes	Leg stroke only 100 yds. 2½ min.	Choice of: back, salmon, swan, jacka, hand-stand, back-roll, spiral, 95%	60 ft. in 15 sec.	Swim 15 yds. dive 7 ft. raise and carry 30 lb. 15 yds. in 80 sec.	35 ft.	50 yds.	100 yds. in 2¼ min.	Time 75 seconds	Breast stroke, English over-arm and any style of double over-arm 90% accuracy
Junior Life Saver	440 yds.	Leg stroke only 100 yds. 3¼ min.	Plain front 95% two others 90%	60 ft.	Swim 15 yds. dive 7 ft. raise and carry 20 lb. 15 yds. in 80 sec.	30 ft.	25 yds.	100 yds. in 3½ min.	Time 100 seconds	Breast stroke, rough-water or single over-arm 80% accuracy
A	220 yds.	100 yds.	Running front dive 90%	45 ft.	Swim 15 yds. dive 7 ft. raise and carry 20 lb. 10 ft.	30 ft.	10 yds.	150 ft. and shed coat		Breast stroke, rough-water stroke 70% accuracy
B	150 yds.	75 yds.	85%	40 ft.	7 ft. dive raise 20 lb. to surface	25 ft.	20 ft.	60 ft.		
C	100 yds.	50 yds.	Plain front 75%	40 ft.	Swim 15 yds. 7 ft. dive raise and carry 10 lb.	25 ft.	10 ft.			
D	250 ft.	90 ft.	Surface dive 80%	30 ft.	6 ft. dive	15 ft.				
E	120 ft.	45 ft.	Surface dive 70%	30 ft.	5 ft. dive					
F	90 ft.	35 ft.	60%	25 ft.						
G	50 ft.	25 ft.	Swimming dive							

EFFICIENCY SWIMMING CLASSES

SOME OF THE SANCTIONS OF SEX.*

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Like all vital topics, fortunately, the psychology of sexuality, and particularly its importance in our present social conditions, have resulted in heated discussions of its pros and cons, and naturally in pro-sers and con-ners. Personally, I am a pro-ser, for I thoroughly believe, as you will see within half an hour, that in general only good can come from "the advancement of learning" in this basal subject among normal adults. I believe more than that: I believe it to be a chief pressing necessity of the day that all, and especially intelligent adults, should be informed of the inferences from these matters.

With the aim of setting in your minds a basis for such discussion at home, especially, I think that perhaps you would care to consider with me briefly some of the most obvious and yet most basal phases of this matter about which you have asked me to speak to you.

Of "eugenic marriages" and school education in sex matters, we are all more or less tired of reading in the newspapers. One obvious reason for this unpleasant mental attitude is that these are not the really important phases of this matter as yet and at the present time. The really important and first thing is an understanding of the *principles*, the doctrine,—the theory underlying these complex and recondite conditions. Principles constitute general rules which can be applied more or less accurately and readily to all cases. The practical part, laws and grammar-school teaching, and so forth, will come later,—generations later, perhaps, when we have learned how to untie this knotty practical snarl. Our present concern, then, is with the sanctions of sex, some, at least, of the most obvious of them. This is a sort of "apology" in the platonic sense,—not an excuse, but rather an explanation in part of how it "happens" that we each are inherently male or female, and burdened and blessed with all this sexual coil. There is no exact equivalent in the English language for sanction, but its meaning in this connection must be clear.

To be logically thorough, we should start with the philosophy of incarnation. Why, we have reason to ask, are we conceived and born at all? Of course, the orthodox theologian and the philosophic scientist, alike, would say,—In order to develop *personality* and character. That is the broad philosophic point of

*Remarks made November 7, 1913, to the Woman's Alliance at the Second Unitarian Church, Dorchester, from a lecture in the School of Eugenics, Boston.

view: we are incarnated that we may individually, that is by our own effort, develop character and personality. Immanuel Kant long since made people believe that good will is the only really substantial good thing in the world. And so far as we can see, good will, or personality, cannot be developed without our, or some kind of, free finite existence. This surely is nothing at all new, but it happens to be one of the considerations, so it seems to me, which people need to have in mind preliminary to a real understanding of the sexual question just now so much in the public consciousness. It is the first link in the living chain that binds all men to sex with all its glory and its horrors. Human personality, indeed, individuality of every living grade, involves incarnation, birth. Birth, in its turn, involves a living environment, society. The basal biologic egotism, as well as all altruism, and life itself, then, are based on the social human life. If you can, imagine a very young child placed entirely alone on a desert island, yet having ready means of sustenance: he would develop no character, no personality in its proper human sense any more at least than the individual plants and trees on which he would have to depend for nourishment; and yet all these plants themselves have well-defined sexuality. Sex is surely a necessary part of this social environment.

Besides this philosophic sanction of birth as incarnation, fundamental in our discussion though trite, there is an indirect sanction of birth (and the need of sex) in the absolute necessity and utter naturalness of death. What, then, are some of the sanctions of death, logical link in the vital chain?

We may express the gist of this matter concisely thus: When a character is developed there is no *reason* for a longer "life." When a personality, good or bad, deep or shallow, has been fairly well evolved, biologically speaking and ethically, there is no purpose or propriety, no motive why the individual should "stay" any longer. This is purely biology—it obviously is not humanism.

Another, and a less teleologic, sanction of death lies in the natural order of things itself. The very essence of mental and bodily nature is change (see Heraclitus and Bergson). All, or nearly all, the physiological evidence is in favor of the *inherent* naturalness of death. There is no *finite* immortality to be demonstrated; there is no known carnal immortality. The body is made to die. The best we can say for the biological or physiological point of view is that protoplasm, the living tissues, are certainly constructed that way. Death appears to be inherent in the ultimate chemical processes at the material foundations of our bodily life. The animal body is in a sense a machine, and like all other machines, despite the fact that it is self-repairing, the body wears out, and must wear out. Weissman believed that death is dependent upon the differentiation changes which have taken place

in the tissues, and Minot followed him in this. Verworn, another distinguished biologist, points out that life itself is essentially continual dying.

The tissues of the body do, indeed, begin to die at an extremely early age. The lenses of the eye, for example, have usually become hard enough so that all except short-sighted people have to wear glasses about the age of forty-five. They begin to harden, it is said, actually before the child is born, and the hardening goes on progressively all through life. The same essentially is true of the cartilages all over the body more or less. The arteries are another example of the same mortal process. A certain amount of vascular hardening beyond "middle age" is normal, and it is merely another important evidence of this inherent tendency of the organism to wear out. We may produce life of a thousand shapes most hygienically, generation after generation, and the individual animals all grow old and all die. Elie Metchnikoff is apparently the only distinguished scientist and biological philosopher who thinks the contrary. You have heard of his arterio-sclerosis notion, namely, that if we would take more "sour milk" and organic lactic acid in general, our arteries would not get hard and brittle. As a scientific proposition that has not been accepted by many people really competent to judge. The whole trend of recent advanced opinion seems to be that life is inherently limited owing to the actual fundamental nature of its metabolism, the physical basis of its more material phenomena.

It is interesting to note in passing that the great majority of human beings who have lived long enough to complete or to tire of their life purposes, which constitute, ethically speaking, their personalities, are willing, not to say glad, to die. The personal attitude at that forbidding time corresponds very closely with the biological attitude of nature, and this fact supports our general contention.

So much for the sanctions of death. Death is inherent in the individual, and, physiologically as well as morally, death is a natural and proper thing. Obviously, the necessity of unceasing birth depends on this inherent necessity and universality of death, for evolution is marching on!

Now many of the protozoa, the simplest animals that there are, only one cell each, are produced without any immediate sexual relations whatever. We are not sure as yet of the precise truth about this matter in respect of all the protozoa; yet obviously they have no sex, and if one ameba melts into another, it could not be termed a sexual union. Animalcules in general have several ways of producing new individuals. Budding is one way. They have a process of bud-formation much like the process in a tree—a literal process of budding. Another method is biological division, or fission, a complete splitting of the animal, giving

rise to two halves, each of which soon develops into a perfect animal. Regeneration in general shows what a marvelous and tremendous power of this process of growth the simplest animals have. A natural question would be, then,—Why cannot “humans” reproduce in this same way without any necessity for sex and all this wretched matter of crime and unhappiness that results directly or otherwise therefrom? The simple answer is that human beings are too large and are far too complex. Sex, then, is certainly inherent in evolution. This necessity for two equivalent and complementary factors or sexes appears to be inherent in evolution itself. One biologist cared for a single protozoan paramecium and some of its descendants for about three thousand generations (in man it would represent nearly a hundred thousand years!) and the last differed in no obvious way from the first. But even if such a process of simple division could be imagined for man, we should have no possibility of evolution, owing to the lack of new material and conditions with their certainty of new combinations and so of change—and evolution. Amelioration (so certain but so slow!) would have no place in a system of reproduction thus limited in material. Numerous chances and conditions of evolution would be lacking were the human process of reproduction like that of the infusoria.

Very early in the animal series, then, in the millions of years since animal life began on this planet, sex appeared and rapidly developed into the most far-reaching contrast that there is in life save individuality itself.

There are, then, in the human species, two equivalent sexes, equivalent in the mathematical sense—not equal, but equivalent—equally necessary, equally human, equally intelligent, equally efficient, equally good, but different and complementary. The dignity of sexuality, then, being based in such irresistible demands, in important, yes, indispensable, principles of life, is as broad, as wide, as deep, as humanity itself. In reproduction alone does a character, any man or any woman, reach its completion and fulfillment. No subject has more human value, as none has more eternal interest, than sexuality, if once we look broadly enough and if we get oriented to the right, that is, humanistic, point of view. We must look at sex thus broadly in order to appreciate its real importance. The poets and the novelists have adequately expressed one phase of this importance. It is the privilege of literature and literature does it well. It is the business of science, on the other hand, to express the fundamental philosophic phases of sexuality. Science understands it, sees its meaning in the scheme of things, and explains to us (or will!) how to unify truth with beauty and true human happiness. Emerson’s “Eros” tells us in a little stanza which ought to be immortal, that

"The sense of the world is short,
Long and various the report,
To love and be beloved.
Men and gods have not outlearn'd it,
And how oft so e'er they've turn'd it,
Not to be improved."

Few printed poems of any length have better than these six lines unified the two aspects of human love and suggested their essential integration. Emerson gave to this poem the name "Eros," expressing, in our day at least, the lustful aspects of love—yet its spirit is obviously "worlds away" from lust, and points toward something which religion summarizes as the essence of Christianity ending in God Himself. These two, lust and love, certainly are but aspects of something else which is neither, but both, something which, in short, is love in its broadest sense.

Deep in the nature of humanity is something, one of the mysteries of science whatever it may be to theology, which transcends the lust and makes it inherently human. As a mental activity, the process of "sublimation" does this, elevating the lustful feelings into what is properly termed love. This process is going on all the time in an almost wholly subconscious, or even unconscious, way. The girl who is engaged to be married, the woman, even, who is married, sometimes does not realize the close relationship between the body-phases of love and the life-long friendship, comradeship, admiration and respect which she has learned to feel towards her sweetheart or her husband. Sublimation is the technical word.

Sex is more or less subconscious and it is the subconscious mind largely which elaborates it into love. Sex, indeed, cannot be really understood without consideration of its unconscious aspect, a scientific, physiological aspect, which, however, we cannot pause here to elaborate as its importance demands. It is extremely necessary in order to really understand, to get the right point of view in regard to sexual things, and in close relation to the subconscious phases of sexuality, because close to its bodily substratum, is a proposition too frequently ignored in our thought on these matters.

This proposition is, in brief, that *body* and *mind* are properly of equal necessity, of equal use, of equal value, and therefore of equal dignity in the scale of life's values. The body, I maintain, is the full equivalent of the mind. That is not generally understood. The contrast here that it is necessary to make is that contrast between the soul on one hand and the body and the mind on the other, and not between the body and the mind. There has been and still is a confusion between the mind and the soul, and not only among thinkers in general and among psychologists of an agnostic or materialistic bent, but among animists, those who

suppose in man something which psychology does not even try to describe. If this distinction were more frequently made and mind not so often mistaken for soul, men in general would be more ready to put body on its proper equality with mind. My notion is that these (I repeat for emphasis) are of equal dignity and value in the scheme of things. The Greeks appreciated this, and those of you who are familiar with the Grecian habits realize how much attention they paid to the worthy body. The Greeks, of course, in addition, produced examples of body form, artificial, if not natural, which the world has yet to equal.

It is now, then, socially necessary to teach the public to realize the old triple division that you read about in the Christian Scriptures—the soul and the mind and the body. Then and then only will it be universally realized that sexuality is a wholly fitting and necessary subject for proper discussion and common knowledge. It is pure prejudice regarding sex (as it is in regard to general physiological education to a slight extent) which keeps the subject a forbidden one. The prejudice has been handed down since the days when Saint Jerome published in his own book that he absolutely forbade any person in a monastery to bathe, and since the ascetic period when one of the holy abbesses said that her nuns “shuddered at the mere mention of a bath.”

It is from the echo of this same essential prejudice against the body, grained into the religious subconsciousness of all sects, that we still suffer in the twentieth century as the great sexual problem looms up for solution. But the advancement of learning is taking a fresh spurt in these years of grace, and many things which were formerly not thought of as normal subjects for scientific or popular discussion have been brought up, and made to show their value to humanity in ways far off from and in a sense far above their own apparent worth. Nature itself is neither good nor bad, and “only man is vile,” and only his good will good. Science has already learned in part to discriminate. The same process is taking place, and properly and usefully, regarding sexuality. This subject, hitherto tabooed for prudish or mistaken other reasons that we do not need to discuss, is now coming into a properly scientific social discussion, and we are beginning to discover that what we formerly thought modesty is simply prudery. Middle age asceticism is a process of dehumanizing the individual, and not one of elevating him. So far as we can see, it is only through the living normal human life that the human individual can develop character or any true personality. Sexuality, at life's very base, then, as it is, cannot be evil or undignified even, for it reaches outward and inward and upward into the sweetest and most beautiful things a finite mind can experience. Children, I take it, too, are the most important of all things, and their care and training the greatest of life's satis-

factions (unless it be work itself). Biologically speaking, and to a large extent socially speaking, the procreation and training of children are the greatest of life's joys. It is quality, however, and not quantity that counts. The problem is how to produce the *best*. This is a matter of the spread of *knowledge* throughout the great public multitude. They must realize (for examples, merely, of the prerequisites of this great work) the entire equivalence of women with men; the perfect dignity and supreme respectability, yes, aristocracy, of sexuality among topics of general knowledge; the disgrace of the "double standard" of sexual indulgence; and certain matters which demonstrate that continence is not inherently an ethical, casuistic matter at all, but one most intimately related to the most practical phases of life-efficiency, and an index of a personal faculty which might be more or less accurately valued even in vulgar dollars and cents and regardless of any one's moral rights and of the ten commandments. These things and undoubtedly valid propositions like them are on the road to certain demonstration by academic scientists as soon as they realize that they are needed in the social life.

Ages uncountable have produced their teeming human life without this basal technical knowledge, to be sure. At least eight thousand years have left their written records in the world, and records of a good many thousand years beyond that of a more indefinite kind. These many ages have produced human life without technical common knowledge of these sexual matters. The great world then will not develop and take to its mind and universal heart this knowledge in a day, nor in a year. It will require, I am afraid, one generation at least. I am a teacher, and not a reformer—and I do not think everything is going to be reformed in a moment. It is going to be a matter of a generation, perhaps, of groping, "trial and error," and of studying how, the right means and the best methods, before this knowledge is properly and safely instilled into the brains of the great majority of our young people. To attempt to accomplish too much too quickly would be to make things worse instead of better. As fast as their minds and hearts are opened, knowledge, and knowledge alone, will solve the problem. And the backbone of this wisdom of how to live well and happily is psychology; and the first psychological students should be the parents and the teachers, and physical educators, and the members of the medical profession. By them shall this essential wisdom be made to enlighten the whole world, and to make it happier.

THE EURHYTHMICS OF JACQUES-DALCROZE.

FLORENCE EVERETT GOOLD, CHICAGO, ILL.

During recent years there has been a vast awakening to the advantages of developing the body as well as the mind, in other words, of returning in large measure to the old Greek ideal of education. The wide introduction of sports and games, gymnastics and dancing into schools are manifestations of this new tendency. Numerous systems of gymnastics, of varying value have sprung up, with bodily development as their chief object. But a system which trains the mind as much as the body, and produces a marvelously rapid communication between brain and muscle, is the unique achievement of Emile Jacques-Dalcroze.

This system, called rhythmic gymnastics, or eurhythmics, may be looked at from various points of view. The one from which Dalcroze himself approached it was that of music. As a teacher in the Conservatory of Geneva, he realized the failure in large measure of modern musical education to turn out real musicians. Music study now means for the most part a vast amount of labor expended on technic, and correspondingly great achievement along this line. This makes for interpretation of others' work, and that is all, for a real feeling for rhythm is not always present, nor has the student any ability to express himself through composition or improvisation. This inability has been expressed in terms of reading and writing. It is as if we could read anything that is written, but could not ourselves write the simplest sentence. In writing, few of us are expected to become great essayists, so in music we are not asked to become great composers. But in both cases self-expression to a small degree should be possible.

Dalcroze also believed that children are called upon to interpret far beyond their ability, with too slight a foundation of fundamental training of the two physical agents for the appreciation of music: the ear for sound, and the nervous system for rhythm. It was to his belief that these two agents can be trained simultaneously that we owe eurhythmics.

Philosophers and scientists tell us that rhythm is one of the basic principles of life; some even assert that it is the basic principle. As such, it may be developed in everyone, and is of greatest practical significance. The small boy needs it, for without it he can never hope to play ball well. And for those who lack it, many acts are rendered more difficult, and some occupations, such as many connected with running machinery, are utterly impossible. A sense of rhythm means that little energy is wasted, for the mind judges of the exact amount required, and is able to transmit the command to the absolutely obedient body.

Eurhythmics in developing the sense of rhythm makes the body itself an instrument for the interpretation of music. The system as worked out by Dalcroze is based exactly on the music, as contrasted with dancing, which is movement with musical accompaniment. In eurhythmics, the arms beat the time, and the feet express the value of the notes. The unit of measure is the quarter note: one step forward accompanied by one beat of the arms. Each note means a progression forward of one step. Eighth notes are two steps to a beat, and sixteenth notes four steps to a beat. A half-note requires two beats of the arms, and as only one step may be taken, the other beat is filled in by a movement on the spot. In this case it is a bend. The dotted half-note occupies three beats, and is expressed by a step and two points with the other foot. Whole notes are done in all tempo, four-four up to twelve-four, in each case a step, and movements to the number required to fill out the allotted number of beats.

The method of working is for the instructor to play the rhythms to be expressed, or "realized" as it is called, and when the students have caught it, at the word of command they begin to march and beat time. This requires a considerable amount of mental concentration, for the arm beats must go steadily on, while the feet may be stepping a rather complicated succession of notes. There is possibility of infinite variation in this sort of exercise, and beyond it there are more difficult ones still. While realizing one rhythm, the music may slip into another. Continuing the first, the pupils make mental note of the second, and at "hop," the word of command, begin to realize it. At the same time the instructor may go on to a third rhythm.

Beating may be done in canon, that is, starting with one arm, the second following one beat behind. It is also possible to beat various rhythms at the same time. For example, one arm may express three-four time, and the other four-four, the head two-four, and the feet march five-four.

Various obstacles to proper performance of these exercises may appear. Lack of balance, inability to keep on the beat, or unequal steps are faults which would later crop out in the musical technic as unsteady time, wrong accents or inability to follow when accompanying.

Dalcroze at Geneva, as far back as 1892, found that his system produced wonderful results, and he decided to have it included as part of the regular work of the conservatory. This was refused, but he continued to develop his system. In 1910, he was called to Dresden, and in a suburb of that city, he established his school. Here at Hellerau is an admirably constructed institute, which has become the Mecca of people of widely varying professions—artists, actors, stage-managers and dancers, as well as musicians.

It may be wondered what benefit these people find. But anyone whose occupation has to do with the carrying out by the body the commands of the brain will be helped—and this really means everyone.

In addition to the realizing of musical phrases, there has been built up a series of twenty gestures, a sort of alphabet by which various emotions in connection with music may be expressed. These gestures may also be done in canon. When a certain facility in the realization of rhythms has been attained, it is possible to express the emotional content of the music very perfectly, and great development along this line may be achieved. Interesting variations in the way of expressing a musical composition are possible, each perfectly correct, yet absolutely individual. This does away with the notion that a mechanical proficiency is the object of the system.

Ear-training, mentioned as the other requisite in the appreciation of music, is carried on, with the object of establishing a sense of relative if not absolute pitch.

The normal course at the institute, which has grown in length from two weeks to as many years, develops the ability to improvise in any rhythm necessary for instruction in the work. This means something which the average technically-developed musician totally lacks.

The object achieved by work in eurhythmics may be summed up in four headings: first, the establishment of sensibility for rhythm; second, an understanding of musical notation and the elements of theory; third, muscular and vasomotor development; fourth, generally educative along the line of attention, plasticity, spontaneity, and apperception. Along with the complete synthesis of mind and body is attained a sense of power and freedom like unto the casting off of prison chains.

It is to be hoped that the work of Dalcroze will make its appeal in America as it has in Europe. But one feels that appreciation will inevitably follow acquaintance, and this acquaintance will be a matter of the near future.

ANNUAL MEETING OF THE COUNCIL.

The annual meeting of the National Council of the American Physical Education Association was held in Chicago, Ill., December 31, 1914, Hotel La Salle, at 9.30 a.m. The following members were present:

William Burdick, A. B., M. D., Baltimore Society.
 Prof. George W. Ehler, Wisconsin Society.
 A. E. Kindervater, B. S. G., Public School Society.
 J. H. McCurdy, A. M., M. D., M. P. E., Editor.
 R. Tait McKenzie, A. M., M. D., M. P. E., President.
 Miss Ethel Perrin, Member-at-large.
 D. A. Sargent, A. M., M. D., M. P. E., Society of Directors of Physical Education in Colleges.

In addition to the above Council members, Mr. E. B. DeGroot, Mr. W. P. Bowen, members of the constitutional committee, and Dr. George L. Meylan, ex-president of the Association, were guests of the Council, at the invitation of the president.

The Council voted to admit the new members as presented by the secretary. A list will follow this report.

The secretary's report was then read and accepted with the auditor's certification, as follows:

MEMBERSHIP REPORT.

	1914	1913	1912
Honorary members	13	12	11
Paid-up members	1,085	957	845
Members one year in arrears	224	164	163
Members two years in arrears	135	120	90
Applicants not yet voted in	38	130	78
Subscribers	288	255	245
Paid-up members and applicants	1,123	1,087	923
Total members	1,488	1,383	1,196
Resignations	27	32	27
REVIEW published in nine issues, pages	701	669	752

FINANCIAL REPORT FROM DECEMBER 19, 1913, TO DECEMBER 19, 1914, WITH COMPARISONS FOR THE YEARS 1912 AND 1913.

RECEIPTS.

	1914	1913	1912
Cash on hand December 19	\$ 451 10	\$ 356 19	\$ 605 49
Received from dues	2,821 10	2,813 81	2,420 86
Received from subscriptions	687 38	499 91	554 94
Proceedings, Intercollegiate	283 82	246 25	*597 43
Sale of reprints, REVIEWS and miscellaneous	268 55	588 33	216 91
Books	762 08	707 56	557 95
Advertisements	715 59	739 20	872 15
	<hr/> \$5,989 62	<hr/> \$5,951 25	<hr/> \$5,825 73

EXPENDITURES.

	1914	1913	1912
Publication and mailing (nine months) ..	\$2,330 74	\$1,942 40	\$2,063 32
Salary and stenographic help	1,000 00	1,000 00	1,000 00
Rebates	526 00	544 00	525 00
Stamps	150 00	164 90	172 05
Office supplies	210 13	79 75	117 95
Reprints	249 21	272 93	312 96
Books	643 15	588 99	399 85
Proceedings, Intercollegiate	255 91	231 19	*593 64
Bibliography	83 25	83 00	74 25
Profits from book business (used for additional office expenses)	118 93	119 09	92 39
Miscellaneous (Convention expenses, express, telephone, secretary's convention and council expenses, etc.)	208 12	473 90	118 13
	<u>\$5,776 44</u>	<u>\$5,500 15</u>	<u>\$5,469 54</u>
	1914	1913	1912
Total receipts	\$5,989 62	\$5,951 25	\$5,825 73
Total expenditures	<u>5,776 44</u>	<u>5,500 15</u>	<u>5,469 14</u>
Balance (cash)	\$ 213 18	\$ 451 10	\$ 356 19
Bills receivable for advertising	68 20	76 45	76 80
Bills receivable for books	199 05	151 65	89 61
Gross balance and good bills	<u>\$ 480 43</u>	<u>\$ 679 20</u>	<u>\$ 522 60</u>

Springfield, Mass., Dec. 21, 1914.

I hereby certify that I have this day examined the books and checked the accounts of the Editor-Secretary-Treasurer of the American Physical Education Association, which show a balance of \$213.18, and to the best of my knowledge and belief they are correct.

[Signed] G. B. AFFLECK,
Auditor.

On recommendation of the secretary, the fiscal year was changed to October 1 from December 19. Two reasons were given for this change: First, the old time of closing the books came in the midst of the largest receipt of dues and the heaviest office work; second, this plan would largely separate the financial business of one year from the next year.

There were twenty-seven resignations presented by the secretary. The members of the Council present offered to write letters to such of these as seemed advisable, asking for reconsideration.

Those members who were two years in arrears and who were dropped at this time according to the constitution for non-payment of dues were also presented.

Reports were received from the local societies. These reports

*Includes also the American School Hygiene Association Report.

will be published in the March REVIEW, as usual. The secretary brought up the matter of rebates to local societies. During the past year considerably over \$100 has been rebated for normal students paying \$1.50. The matter was referred to the constitutional committee.

The secretary reported that the normal schools had coöperated by sending in changes of addresses of students according to the suggestion made last year by Dr. E. H. Arnold.

The president was asked to appoint a committee to draft resolutions regarding the life and work of Jakob Bolin, one of the first presidents of the Association, these resolutions to be published in the REVIEW and a copy sent to Mrs. Bolin.

The secretary reported on the mail vote received concerning the time and place of the next convention, as follows: There were twenty-six votes received, all of which favored Berkeley, Cal., with twenty-four favoring the last week of July, 1915. It was voted to hold the convention in Berkeley, Cal., the last week of July, the exact date, upon recommendation of Professor Ehler, to be left to the executive committee after the report of Mr. DeGroot, chairman of the program committee, Mr. DeGroot to confer personally with the authorities at the University of California, as he felt that they would bear the local convention expenses if the convention time fitted in with their summer school program.

Mr. E. B. DeGroot was appointed chairman of the program committee, with the understanding that the other members should be appointed after conference.

The matter of the amendments to the constitution was then taken up. The secretary reported the mail vote, which was sent out on Professor Ehler's amendments, which were presented to the Council at its annual meeting, 1913. According to the constitution, these amendments were printed in the January REVIEW and a mail vote sent out to the Council three months afterward. There were two votes cast favoring the amendments and twenty-one against, the result of this vote being published in the May REVIEW, page 398.

The report was then received from the constitution committee through Dr. R. Tait McKenzie, chairman. He read the letters in order from J. H. McCurdy, Ethel Perrin, Carl Ziegler, William W. Hastings and E. H. Arnold, with recommendations that the constitutional committee be continued for report at the California meeting.

The constitution committee is as follows: Dr. R. Tait McKenzie, chairman, Dr. E. H. Arnold, Professor W. P. Bowen, E. B. DeGroot and Dr. George L. Meylan. On motion of Professor Ehler, this committee was authorized to incur necessary expenses subject to the executive committee.

Mr. DeGroot spoke on the desirability of the constitutional committee following the plan of the National Geographical Society. He also spoke of the possibility of his securing money for a broader promotion of the work of the society.

The nominating committee, consisting of Dr. Sargent, Dr. Burdick and Miss Perrin, recommended as officers for 1915: President, R. Tait McKenzie; editor, secretary, treasurer, J. H. McCurdy; additional members of the executive committee, George W. Ehler, Dr. C. E. Ehinger and Maud May Babcock. These officers were elected.

The secretary asked advice concerning the increase in the number of advertisers, and was advised by the the Council to continue negotiations with advertising agencies.

The following were admitted to membership in the American Physical Education Association.

Belle J. Allen, 6 D 500 West 122d Street, New York, N. Y.
 Harry A. Batchelor, 420 Eastern Avenue, Springfield, Mass.
 Fred C. Belmer, Y. M. C. A., Syracuse, N. Y.
 Ernest Benatre, International Y. M. C. A. College, Springfield, Mass.
 Albert W. Blake, 726 Palmer Avenue, Pueblo, Colo.
 Fred A. Bode, International Y. M. C. A. College, Springfield, Mass.
 Elmer B. Cottrell, International Y. M. C. A. College, Springfield, Mass.
 Harold S. DeGroat, Y. M. C. A., Attleboro, Mass.
 Carl W. Dipman, 1316 Southeast 5th Street, Minneapolis, Minn.
 John C. Everard, 2800 5th Avenue S., Minneapolis, Minn.
 Harry E. Frayer, 4 Gunn Square, Springfield, Mass.
 Stacey V. Gerwig, 211 King Street, Springfield, Mass.
 Benjamin B. Goodman, 33 Essex Street, New York, N. Y.
 Charles Gregory, International Y. M. C. A. College, Springfield, Mass.
 Guy H. Harmon, International Y. M. C. A. College, Springfield, Mass.
 May O. Herbert, North High School, Minneapolis, Minn.
 Harry Hoogesteger, International Y. M. C. A. College, Springfield, Mass.
 Mary Burr Hulsizer, Y. W. C. A., St. Paul, Minn.
 H. Myrtle Humner, 500 West 122d Street, New York, N. Y.
 James R. Irwin, 235 Logan Square, Philadelphia, Pa.
 H. W. Jenkins, 195 Northampton Avenue, Springfield, Mass.
 Francis Jouannet, International Y. M. C. A. College, Springfield, Mass.
 A. J. Kittredge, International Y. M. C. A. College, Springfield, Mass.
 Leon G. Kranz, 72 Alden Street, Springfield, Mass.
 Frank A. Lenhardt, International Y. M. C. A. College, Springfield, Mass.
 John H. Magee, International Y. M. C. A. College, Springfield, Mass.
 Marvin H. Markle, Central Y. M. C. A., Baltimore, Md.
 Louise Martin, 701 Lodi Street, Syracuse, N. Y.
 Thomas Nelson Metcalf, Columbia University, New York, N. Y.
 Alice May Richardson, 1217 Lee Street, Evanston, Ill.
 Kenneth B. Rowley, 129 Greene Street, Springfield, Mass.
 Charles F. Salt, 38 Thomas Avenue N., Minneapolis, Minn.
 Henry J. Schnelle, 87 Orange Street, New Haven, Conn.
 J. H. Smith, International Y. M. C. A. College, Springfield, Mass.
 Jessie E. Spore, Central High School, Minneapolis, Minn.
 George T. Stafford, International Y. M. C. A. College, Springfield, Mass.
 W. H. Weaver, 622 North 14th Street, Fort Smith, Ark.
 Louise Wells, 503 West 121st Street, New York, N. Y.

NEWS NOTES.

Members should notify the secretary immediately of change of address.

Basket ball is played in Porto Rico in about twenty of the cities and the smaller towns by both boys and girls.

Meeting of the Department of Superintendents to be held at Cincinnati, Ohio, February 22-27. Hotels Gibson and Sinton will be used jointly as headquarters. All registrations will be made at Hotel Gibson. These hotels are located on opposite sides of Fort Street in the block between Walnut and Vine Streets.

BOSTON SCHOOL OF PHYSICAL EDUCATION.

This school has recently issued its first annual catalogue. The officers, members of the corporation and board of trustees are: President, Marguerite Sanderson; secretary-treasurer, Mary F. Stratton; Caroline A. Baxter, Marjorie Bouve, Elliott G. Brackett, M. D., Joel E. Goldthwait, M. D.; Board of Trustees, Caroline A. Baxter, Marjorie Bouve, Marguerite Sanderson, Grace L. Shepardson, Mary F. Stratton. Marjorie Bouve is the director. The introductory page gives the plan of the school. "The Boston School of Physical Education entered upon its first year September 27, 1913. The school was established to provide for women a thorough training in physical education which would fit them to meet as teachers the increasing need for instruction in the proper use of the body and its functions in relation to human efficiency.

"In accordance with this aim, a course of study has been arranged covering two years of thirty-two weeks each. Instruction is given in carefully directed practical work—gymnastics, games, dancing and swimming—with which are correlated systematic courses in the allied academic subjects—anatomy, physiology and hygiene—in proportions designed to secure a well-balanced curriculum. The pedagogical aspect of the work is supplied by a course in education. Throughout the course emphasis is laid upon correct posture. All the work is supplemented by outside lectures.

"In order that the work of each student may be carefully supervised, the number admitted will be limited.

"The school is incorporated as 'an educational institution not for profit.' The board of trustees, after meeting the current

expenses, intends to put any surplus back into the school to make it the best in the country. It proposes to graduate only such students as will make good teachers, and who are qualified to carry forward and maintain the highest ideals of physical education in their professional work."

The catalogue may be secured by writing to the school, 585 Boylston Street, Copley Square, Boston, Mass.

UNIVERSITY OF WISCONSIN NEWS NOTES.

Unusual opportunity is offered in sports for women at the University of Wisconsin. In the fall, the girls have tennis, field hockey, swimming, tether ball and quoits; in the winter, swimming, basket ball, indoor baseball, fencing, bowling, dancing and gymnastics; in the spring the sports of the fall are in favor, except that baseball takes the place of hockey. "Hikes" are popular in spring and fall, and skating and rowing, while not included in class work, receive due attention in season. Indoor baseball has been added to the list only this year, lack of space preventing its enjoyment before.

Social dancing, begun last year, became so popular, and the class increased to such proportions that two divisions were provided for this year, one for those who had never danced, the other for those with some knowledge of the art. Basket ball and bowling rank next to dancing in popularity.

Pending the development of intramural water sports, the University of Wisconsin crew has been prohibited by the board of regents from taking part in intercollegiate boat races. This action was based upon long, careful study of the health condition of the boating squads made by the medical clinic. The study covered the men who have participated in crew activities for the years 1911-14.

Of the fifty-nine candidates for freshman crews in the years 1910-13, the clinic secured medical records of fifty-six. Of these, six had cardiac hypertrophy before they began rowing. During one season's training, twenty-two developed cardiac hypertrophy, making a total of twenty-eight freshman oarsmen with this trouble.

"The records of the 'varsity crew candidates," says the report of the athletic council, "are essentially subsequent histories of these men, as the 'varsity is almost completely recruited from the freshman crews. These crew records show that of a total of fifty-six men training for the crews, seven had cardiac hypertrophy before beginning training, and thirty-three acquired the condition as a result of such training. Included in this list are

twenty-three 'W' men, of whom four had hypertrophy before making the crew, and sixteen developed it, giving a total of twenty out of twenty-three 'W' men."

Practical work in playground supervision is a part of the required course of the University of Wisconsin for young women studying to become directors of physical education. Regular work is conducted at the Wisconsin high school, basket ball and folk dancing are taught in two of the public schools and some social center work is carried on, all under the direction of Miss Blanche M. Trilling, director of physical education for women. Nearly 50 women are enrolled.

The extension division of the University of Wisconsin, published an interesting program of the Bloomington Community Health and Recreation Institute, which was held March 11, 12 and 13, 1914.

INTRODUCTORY STATEMENT.

The economic interests of the community have been emphasized to the business man by the commercial club and to the farmer by the farmers' institute. Their work has been necessary and beneficent. Until now, however, those larger interests of the community—the welfare interests, including such things as health, recreation, and the creation of a community spirit, and unity and common concern for the things which are not merely monetary in their nature—have been neglected.

The community institute does not ignore or belittle the monetary interests of the community. But it does emphasize some of the neglected and larger human concerns of the neighborhood. It emphasizes the fact that the proper food for the family is as important as a balanced ration for the cow or the hog. It stands for the belief that the health of the household is of as much importance as the health of the cow barn or the hennery or the piggery. It is a sign that people are coming to a realization that the rearing of boys and girls to a manhood and womanhood of intelligence, conscience and honest efficiency is equal at least in significance to the production of blooded animals, or the building up of successful businesses or the establishment of factories. In short, it is an institution for the promotion of thoughtfulness concerning the great social problems of our day, upon the proper solution of which in each community depends so much of the future welfare of our country. In this particular institute the two subjects of health and recreation are emphasized.

PROGRAM.

MARCH 11-13, 1914, BLOOMINGTON, WIS.

First Day—Wednesday, March 11.

Forenoon.

- 9.00 Domestic Science—Cooking Demonstration (Hickok Building).
Short Cuts in Cooking, Miss Cora E. Binzel, Instructor in Home Economics, The University Extension Division.

Noon.

- 12.00 Luncheon under Auspices of the Bloomington Social Center Club (Odd Fellows Hall).

Fifteen Minute Talks:

1. Bloomington's Community Problems, Prof. J. L. Gillin, Secretary, Department of General Information and Welfare, The University Extension Division.
2. Bloomington's Municipal Problems and their Relation to the Community's Welfare, Prof. Ford H. MacGregor, Chief, Municipal Reference Bureau, The University Extension Division.
3. Where We Need Help—the Viewpoint of an Insider, Oscar Knapp, Bloomington, Wis.
4. General Discussion.

Afternoon.

- 2.00 Women's Meeting—General (Hickok Building).
 1. Care of Infants and the Home (Lecture), Dr. Maude Williams, Milwaukee, Wis.
 2. Invalid Cookery, Miss Cora E. Binzel.
- 2.00 Farmers' Meeting, Arthur McKeivitt presiding (City Hall).
 1. Corn Growing, C. E. Beckley, Lecturer on Farm Topics, The University Extension Division.
 2. Money Value of Sanitation on the Farm, G. R. Bascom, Instructor in Mechanics and Materials, The University of Wisconsin.
 3. The Country Home, Prof. C. J. Galpin, Instructor, Agricultural Economics, The University of Wisconsin.
- 4.15 Children's Meeting (City Hall).
Moving Pictures on Health, T. J. Werle, Lecturer, Wisconsin Anti-Tuberculosis Association.

Evening.

- 7.30 General Audience, Dr. James E. Heraty presiding (City Hall).
 1. Illustrated Lecture on Health, Dr. W. D. Frost, Associate Professor of Bacteriology, The University of Wisconsin.
 2. Moving Pictures on Health, T. J. Werle.
 3. Community Music, I. W. Jones, Instructor in Music, The University of Wisconsin.

Second Day—Thursday, March 12.

Forenoon.

- 9.00 High School Students (High School Assembly Room).
Personal Hygiene, T. J. Werle.

- 10.00 Domestic Science—Lecture and Demonstration (Hickok Building).
Starchy Foods and How to Cook Them, Miss Cora E. Binzel.
- 11.00 In Some of the Grades (School Building).
Getting Acquainted with the Trees (illustrated), Dr. J. C. Elsom, Professor of Physical Education, The University of Wisconsin.

Afternoon.

- 2.00 Farmers' Meeting, William Patterson presiding (City Hall).
1. Alfalfa, C. E. Beckley.
2. Why the Farm Boy Leaves the Farm, J. L. Gillin.
3. The Highways and the Community Welfare, J. T. Donaghey, Chief Inspector, State Highway Commission, Madison.
- 2.00 Women's Meeting (Hickok Building).
1. Care of the Sick (What mothers, teachers and women over eighteen should know about health and disease), Dr. Maude Williams.
2. Selecting Clothing Materials, Miss A. Turner, Instructor in Home Economics, University Extension Division.
3. House Games for Children, Dr. J. C. Elsom.
- 4.00 General Meeting (City Hall).
1. Community Music, I. W. Jones.
2. Moving Pictures on Health, T. J. Werle.

Evening.

- 7.30 General Audience, Oscarr Knapp presiding (City Hall).
1. The Dairy Cow, J. G. Voss, Elkhorn, Wis.
2. Illustrated Lecture on Prevention of Accidents and Disease, Prof. J. L. Gillin.
3. The Public Library and Community Welfare, M. S. Dudgeon, Free Library Commission.
4. Motion Pictures on Tuberculosis.

Third Day—Friday, March 13.

Forenoon.

- 10.00 Women's Meeting (Hickok Building).
Intelligent Buying of Foods, Miss Cora E. Binzel.
- 11.00 High School (High School Assembly Room).
Health and Social Efficiency, T. J. Werle.
- 11.00 In Some of the Grades (School Building).
School Room Exercises and Games, Dr. J. C. Elsom.

Afternoon.

- 2.00 General Meeting (Men and Women), Michael Casey presiding.
Educational Value of Play and Playgrounds (illustrated), Dr. J. C. Elsom.
- 2.45 Farmers' Meeting, Henry Roberts presiding.
1. Poultry for Profit, C. E. Beckley.
2. Economic Loss from Preventable Diseases, L. W. Hutchcroft, Secretary, State Board of Health, Madison.

- 2.45 Women's Meeting (Hickok Building).
1. Clothing for the Children, Miss A. Turner.
 2. A Health Talk about Children Below High School Age (designed especially for mothers and teachers), Dr. Maude Williams.
- 4.15 Children's Meeting (City Hall).
1. Getting Acquainted with the Birds (illustrated), Dr. J. C. Elsom.
 2. Motion Pictures, T. J. Werle.

Evening

- 7.30 Motion Pictures.
Community Program by Local Talent.
The exhibits will be installed in the City Hall.

NEWARK NOTES.

At a recent meeting of the Newark Athletic Association, several radical changes in the rules were made in order to encourage more girls and boys (last year there were 7000 entries) to compete in the various athletic events. Plans were laid for the purpose of raising money to defray the expenses of holding our field day. To conduct a meet with greater care, and to increase the entry list, it was decided to hold the standard events some time (say two weeks) before the field day, at certain school centers, parks, gymnasias, etc.—places easily reached by children from a certain district—and to devote the field day to prize events only.

By the change of the "3 boy" to the "5 boy" rule, which allows five instead of three boys from one school to enter any one prize event, it is hoped to increase the number of prize entries. An event button, instead of the present standard button, will be given the successful candidate in any event; for example, the 100-yard button, the broad-jump button, etc. A boy may enter both standard and prize events, but if successful in both, only the points of the latter will count.

Among other changes, girls will be grouped into the following classes: (A) 8th and 7th grades, (B) 6th and 5th grades, (C) 4th and 3d grades. Thus, the eighth-year girl may attempt what formerly was the seventh-year event, and vice versa, and so on to the third grade. This gives the girl a choice of four events where formerly there were only two. Following are the events for the girls. Their description may be found in the handbook of the Newark Public School Athletic Association.

Class A Prize Events:

1. Oat-bag relay race.
2. 440-yard relay race (eight girls). Standard event.
3. Throwing the basket ball for distance (40 feet).
4. Throwing the four-pound bag for height (17 feet).

Class B Prize Events:

1. Indian club and flag relay.
2. Potato relay race. Standard event.
3. Hand walk twice the length of a sixteen foot horizontal ladder.
4. Thirty-yard dash.

Class C Prize Events:

1. Twenty-yard dash (twenty girls on a team, total time). Standard event.
2. Throwing the indoor baseball for distance (30 feet).

NOTE: This is the first year for third-year girls, consequently only two events will be used in class C.

There was some talk of raising the entrance fee of ten cents but the Association ruled that that fee should stand. Children taking part in the standard events will be allowed to see the field day without paying admission; their entrance fee card will be recognized at the gates.

The Newark Board of Education pays for the tickets, programs, entry blanks and also furnishes workmen to erect fences, tents, and to prepare the field for the meet, but the medals and buttons, as well as the cups and banners, not donated by public-spirited gentlemen, are purchased at considerable expense by the Newark Athletic Association. As a means of raising money to defray this expense, it was decided to hold a series of gymnastic and athletic exhibitions at various school centers. This was to be done as soon as possible, and the admission fee would be a nominal sum.

It is with great regret that we announce the resignation, from the Newark Physical Training Department, of Mr. Herman Seibert, after but a short six months' work in the schools here, during which time he organized and conducted the work in such a manner as to gain the admiration of both the principals and pupils of the Ridge and West Side schools. He resigned to assume the position of physical director of the Bayonne public schools.

Several new gymnasia were opened with the present term. The appointment to these schools, and transfers made follow: Irving Levin, Central Avenue School; Herbert Meyer, Newton Street School; Myer Danufsky, Ungraded School No. 1; John Morris, Ridge and West Side Schools; Richard N. Hall, Hamburg Place School. Mr. Guido Cavallaro was promoted from the elementary to the high school department, being now the assistant director at the South Side High School. Miss Margaret

Raleigh was transferred from assistant at Central High to director at East Side High. Mr. H. Percy Hermanson was transferred from Hamburg Place to Belmont Avenue School.

One new gymnasium will be completed within a month and the plans for two other new gymnasia have been drawn and work will be started on them in a short time.

An examination of candidates for the position of athletic director was held at the Central Commercial and Manual Training High School building on Monday, December 28, 1914, beginning at 9 a.m.:

Written Examination:

Subjects: Theory and practice of physical training.
Gymnastics and athletics.
Rules of coaching.

Requirements:

Only candidates who possess one of the following qualifications will be considered eligible to take the written examination:

1. (a) Graduation from an approved four years' high school course, or an equivalent; and
(b) Graduation from an approved physical training school; or in lieu thereof, two years' successful experience in teaching physical training.

or

2. Graduation from an approved college or university with one year's experience in physical training or athletics as approved by the Board of Examiners.

The examination will be open to men *only*.

Oral Examination:

Candidates who are successful in the written examination will be given an oral examination and a practical test on the day following the written examination, at the same time and place. Applicants should provide themselves with gymnasium suits for use in the practical tests.

Candidates will be rated upon the following basis: Written examination, 50 per cent; oral examination (experience 25 per cent, fitness 25 per cent), 50 per cent; total 100 per cent.

The salary for the position of athletic director is from \$1200 to \$2000 per annum, according to experience and fitness.

Candidates who wish to take the above examination must file an application blank with the City Superintendent of Schools, City Hall, not later than *December 22, 1914*. Blanks on which to make formal application can be had upon request. If an application has been filed previously, notify the Superintendent of intention to take the examination.

A. B. POLAND,
City Superintendent.

HEALTH CONSERVATION AT THE PANAMA-PACIFIC EXPOSITION.

San Francisco, July —.—Each of the great world's expositions of history has had its "uplift" side show or its ethical or scientific phase. For example, at the Chicago World's Fair, it was the World's Parliament of Religions; at the St. Louis Exposition great stress was laid on a World's Congress of Arts and Science. The Panama-Pacific International Exposition at San Francisco will go a long way further toward the heart—and stomach—of humanity to find its basic idea. That idea or keynote is service—social, industrial, educational, hygienic, fraternal, economic.

The most pressing problems of to-day and of to-morrow—the problems of human welfare—furnish the basis not only of a large proportion of the 60,000 exhibits which already have been secured to fill the sixty-five acres of the eleven vast exhibit palaces, but of the laboratory and platform work of most of the extraordinary series of national and international congresses and conventions which will make San Francisco their headquarters in 1915. Fully 500 such great gatherings are expected to hold sessions there; and of these, 221 already have voted to be present. In some instances a single one of these world congresses will bring 10,000 to 40,000 delegates and members from 20 to 35 nations; and a total of over a million delegates, all people of thought and of ideas to swap—already is assured.

Health—physical, moral and mental health—is the topic which in greater or less degree will engage the attention of scores of these great gatherings, and which will dominate acres of exhibits not only in the five-acre palace of Social Economy and Education, but throughout the exposition generally. In the great building devoted to social economy will be most of the exhibits made by the various foreign and state governments. These will be chiefly working displays and automatic wax and blown glass models, designed to popularize hygiene, physiology, sanitation, factory regulation and the like. These models, for the U. S. government and for some of the largest business and philanthropic corporations in the country, will be created on an elaborate scale never before attempted by the celebrated Dr. Philip Rauer, and a corps of trained specialists who in April of this year came over from Stuttgart, Germany, at the invitation of the Rockefeller Foundation and of the Panama-Pacific Exposition to take charge of such work. Rauer is the man who created the greatest series of models ever seen, called "Der Mensch" (The Human Being), for the Dresden Exposition, and which it is intended shall be shown at San Francisco. He will install a still greater lot of models for the U. S. health exhibit, on which a considerable part of the

\$500,000 appropriation will be expended. This governmental exhibit probably will be shown in a special federal building to be erected by Uncle Sam at an additional cost of half a million dollars, the President having made such recommendation in April of this year. In the national display the cause and prevention of each of the more prevalent diseases will be visualized by means of models, relief maps and stereomograph pictures in combination with the phonograph and moving pictures.

The hygienic displays made by individual states will be so selected as to avoid duplication. Thirty-eight states and territories will participate. Dr. Rupert Blue, Surgeon General of the U. S. Bureau of Public Health, held a conference in Washington in June, with the members of all the state boards of health and with the principal municipal boards. At this conference details as to the character and scope of the hygienic exhibit of each state and city were threshed out, so that each will display its specialty, no two showing the same thing at the exposition. This insures an invaluable and varied series of exhibits of an educational nature. It is claimed that this is the first time in the history of expositions that the "no duplication" system has been adopted. It is not confined to any one department, but it is the watchword in all the great palaces of exhibits.

This greatest of world expositions commemorates the completion of the Panama Canal, and this, the greatest engineering feat of modern times, was made possible only by the achievements of medical science; the foundation of the whole project being the sanitation of the canal zone. This great work will be exploited with great thoroughness in various exhibits and by learned and scientific bodies. Col. G. W. Goethals will preside over the sessions of the International Engineering Congress which will meet at the exposition for a week in September, and he and his canal chiefs will make personal reports and addresses on every phase of the canal work, which afterwards will be published in eleven large volumes. About 25,000 civil, electrical, mechanical, sanitary and military engineers from over thirty nations have accepted the invitation to attend this congress. Among the laboratory exhibits will be replica of the Panama Canal, 500 feet in length, with miniature ships passing through it, and relief maps, charts and wax models.

Cuba, which claims credit for doing the pioneer work in tropic city sanitation and in the eradication of yellow fever and plague, which made the later canal work possible, will come to the exposition with an elaborate hygienic exhibit which will occupy the most prominent place in the Palace of Social Economy, and will include model hospital equipment, a model of a fever mosquito as large as an ostrich and automatic models made by Rauer to show at a glance how to combat tropical diseases. Cuba's appro-

priation is a quarter of a million dollars. Argentina, with the enormous appropriation of three million pesos, will have a very modern welfare and health exhibit, and Japan, France, Germany, the Philippines and thirty other countries will be well represented. It has been planned to bring to San Francisco the most important of the great welfare, civic and health exhibits from the Urban Exposition which opened in Lyons, France, in May, 1914. Also the great British exhibits which were shown at Ghent last year, it is expected, will be brought over in their entirety.

In addition to the governmental and state exhibits, there will be unexampled health and human welfare displays assembled by such organizations as the American Steel Corporation, which expects to expend \$100,000 on its exhibits; the General Electric Company, which also will show its appliances for conserving the health of factory employees; the various insurance companies; the Rockefeller Foundation, which will concentrate on the measures taken to eradicate the hookworm; and the Russell Sage Foundation, and Carnegie institutions and the Social Survey. All health and social economy displays made by commercial firms will be housed in the five-acre Mines building, along with an exhibit by the federal government, covering work done for the health and safety of miners.

Another exhibit of importance to the medical and surgical world is the model emergency hospital which the exposition already has installed. It is in charge of Dr. R. N. Woodward, superintendent of the U. S. Marine Hospital in San Francisco, and will be maintained by the U. S. Department of Health, although most of the equipment—which represents the highest achievements in sanitary appliances—has been contributed by various manufacturers. As in all other exposition departments, practically all these displays are products of the past decade. This hospital exhibit includes model automobile ambulance, a sterilizing room, an X-Ray room, a library, operating chairs, surgical instruments and equipment, a drug room and the like. It will be used as the exposition emergency hospital.

Included in the series of 221 international and national congresses and conventions of learned, scientific, industrial, ethical and other bodies which already have voted to hold their sessions at the Panama-Pacific International Exposition, are many conventions having to do directly with public health and hygiene. Among participants will be the American Academy of Medicine, the National Commission on Mental Hygiene, five organizations of eye, ear, nose and throat specialists, various societies for the elimination of tuberculosis, cancer and other diseases, the Panama-Pacific Dental Congress, which will bring over 3000 delegates with a clinic of twenty-five to fifty chairs, beginning September 9; the American Red Cross Association, and the Inter-

national Congress of Nurses, which will be represented by 6000 nurses from fifteen countries. Affiliated with this nurses' congress, which last met in Cologne, in July, are the American Nurses' Association with 22,000 members, the National League for Nurses' Education, with 12,000 members, and the National Organization of Public Health Nurses. This congress will bring an elaborate series of exhibits, including late hospital equipment, model wards, a Florence Nightingale exhibit and a model hospital mortuary as developed in Europe.

It is probable that the American Medical Association also will hold its 1915 sessions at the exposition, although definite action is yet to be taken. It will be at least represented in the Palace of Social Science by a valuable exhibit covering the work of the Association in educational and legislative work, particularly looking to the elimination of quacks and fake medical schools and adulterated and fake medicines and drugs.

The sessions of all these bodies will be held for the most part in the new permanent Auditorium which the exposition is erecting at a cost of \$1,065,000, and which has a seating capacity of 10,000 in its main hall, with eleven subsidiary halls. The Festival Hall with a seating capacity of 3000, and the Greek Theater at the University of California, seating 12,500, visible across the bay from the exposition grounds, also will be used for these vast congresses.

The Massachusetts Society for Mental Hygiene has opened an office at Room 313, Ford Building, 15 Ashburton Place, Boston. The officers of the society are: the Honorable Harvey H. Baker, Boston, president; Dr. Walter E. Fernald, Waverly, vice-president; Dr. Charles E. Thompson, Gardner, secretary; John Koren, Esq., Boston, treasurer. Executive Committee: Miss Edith M. Burleigh, Boston; Dr. James J. Putnam, Boston; Dr. Alfred E. P. Rockwell, Worcester; Dr. Henry R. Stedman, Brookline; Prof. Robert M. Yerkes, Cambridge. Dr. Frankwood E. Williams, formerly resident physician at the Psychopathic Hospital, Ann Arbor, Mich., and first assistant physician at the Psychopathic Hospital, Boston, has been appointed executive secretary.

The new address of the Posse Normal School of Gymnastics is 779 Beacon Street, Boston, Mass.

A short list of books representative of the best on health and hygiene of girls, selected and endorsed for general reading by the

subcommittee on Medical Literature of the American Medical Association.

BELL—Our Teeth: How to Take Care of Them.

BRYCE—Laws of Life and Health.

CALL—Power Through Repose.

DODGE—A Bundle of Letters to Busy Girls.

GULICK—Mind and Work.

KING—Rational Living.

LATIMER—The Changing Girl.

MACFIE—Air and Health.

MOSHER—Health and Happiness: A Message to Girls.

PUSEY—The Care of the Skin and Hair.

PYLE—Personal Hygiene.

SADLER—The Science of Living and the Art of Keeping Well.

SALEBY—Health, Strength and Happiness.

SMART—What a Mother Should Tell Her Daughter.

SOLIS-COHEN—Woman.

BOOK REVIEWS.

LABORATORY MANUAL FOR HUMAN PHYSIOLOGY. By *Carl Hartman*, Instructor of Zoölogy, University of Texas. *World Book Company*, Yonkers-on-Hudson, N. Y., 1914. 12mo. pp. 144. Price \$.60.

This text consists of experimental studies in hygiene, sanitation and physiology. It has been prepared especially for use with Ritchie's "Human Physiology." Experiments are well and carefully selected and described with much detail, so that any teacher should be able to perform them. The material presented is such as would be useful for high school, academy or college freshman classes. The histological side is rather heavily developed throughout. The section on foods deserves commendation. From a physical director's point of view not enough attention is given to factors influencing circulatory changes or to exercise. As an elementary manual the text is most commendable and much that is suggestive will be found by all having to do with physiologic demonstrations.—*E. B.*

DIET IN RELATION TO AGE AND ACTIVITY. By *Sir Henry Thompson, Bart., F. R. C. S., M. B.*, London. *Frederick Warne & Co.*, London and New York. 16mo. pp. 134. Price \$1.

This little work contains the results of a long and extensive practice of twenty-five or thirty years, giving advice much needed by men of all ranks and occupations among the well-to-do classes of society. Those at or past middle age will find many helpful suggestions for prolonging life with that health and vigor without which it could hardly be considered a boon. Among the topics are alcoholic beverages, overeating, vegetarianism, light dietary for brain workers, simplicity in diet, exercise, baths, obesity, sugar as a food, etc.

The text is somewhat verbose and hardly scientific in statement, but will be found instructive for popular reading.—*E. B.*

SEA SCOUTING AND SEAMANSHIP FOR BOYS. By *W. Baden Powell*. *Simpkin, Marshall & Co.*, London. 12mo. pp. 190. Price 1s.

The thirteen chapters in this handbook treat briefly the various phases of seamanship ranging from the ancient times through the days of pirates, buccaneers and slavers, the times of the press gang, privateering and smuggling, to present day considerations such as models of sailing craft, tides and currents, flags, signals, buoys and beacons, knots, splices and hitches, furling and setting sail, etc. It is written from the English point of view, but apart from such matters as tides, flags, etc., which have a local application, the text will be found of universal interest to boys.—*G. B. A.*

THE PEOPLE'S HEALTH. By *Walter Moore Coleman*. *The Macmillan Co.*, New York, 1913. 12mo. pp. 307. Price \$.70.

Among the many popular and elementary texts on hygiene which have appeared during recent years, this one certainly deserves a place. It is a judicious combination of theoretical and applied hygiene, the author taking consistently the point of view of the prevention of disease, and giving the

scientific basis as well as the practical application of each measure considered.

Following the introductory chapter on the need of attention to public hygiene, the author shows how it may be promoted by means of fresh air, pure water, milk, food, exercise, play and mental hygiene. He completes this section of the text with a good simple statement on the nature and means of infection.

Domestic, school, rural and industrial hygiene are each treated in turn, and the text closes with a very sensible chapter on health as a means of resistance to disease. The abundant illustrations are unique, most of them having a very definite relationship to the text.—*G. B. A.*

HEALTH THROUGH DIET. By *Kenneth G. Haig*. *J. B. Lippincott Co.*, Philadelphia, 1914. 12mo. pp. 227. Price \$1.25.

In this text the author has endeavored to present a popular treatise which will serve as a practical guide to the uric-acid-free diet. His claim is that diet rightly understood is "the foundation to our national and individual welfare—that the rise and fall of nations is determined by the circulation in the body and in the brain." His general point of view is that, except for the small amount of proteid material which is physiologically necessary, the diet should be relatively free from uric acid and its equivalents. His treatment consists in first listing the common foods which are forbidden, then, in brief notes of the food values of that permitted in the acid-free diet, with suggestions as to how to change from the ordinary to the hygienic diet. Objections to the purin-free diet are discussed under the form of answers to questions. A special chapter is given to the relation of the proposed diet to women and children. Training for athletic contests is regarded as closely related to the use of the purin-free diet, and the means recommended for checking on the condition of the athlete is the diurnal records of blood pressure and capillary reflux.

The section on Diet in Disease has its chief interest in the treatment given relative to constipation, obesity and exercise. The strictly scientific material is placed in the appendix under two divisions—tables of proteid quantities and methods of calculating proteid requirements; also specimen daily dietary worked out in meals.—*G. B. A.*

THE BOY SCOUT'S HIKE BOOK. By *Edward Cave*. *Doubleday, Page & Co.*, New York, 1913. 12mo. pp. 243. Price \$1.

All attempts to familiarize boys with the woods and the out of doors through books are bound to be more or less disappointing. Either the various outdoor stunts are made to appear too simple, the conditions in which the boy finds himself differ from those described in the text, or disappointing results not mentioned in most handbooks are sure to come. In this text the author has brought together a fund of facts and suggestions selected from the experience of himself and others, and has in the main grouped them under such heads as Methods of Walking, Outfits, Tents, Making Camp, Rough Weather, Exploration, Woodcraft, Emergencies, Observation, Useful Hints, etc.

In general the selection is as commendable as could be expected from any individual who is bound to be influenced by his personal preferences. With the exception of a few obvious errors the text is very desirable, especially for youngsters, since it is so compiled as to be interesting and entertaining, not merely instructive.—*G. B. A.*

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AMERICAN PHYSICAL EDUCATION REVIEW

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JAMES HUFF McCURDY, M. D., Editor

FOR

THE AMERICAN PHYSICAL EDUCATION ASSOCIATION

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AMERICAN PHYSICAL EDUCATION REVIEW

JAMES HUFF MCCURDY, M. D., *Editor*

Vol. XX. No. 2

FEBRUARY, 1915

Whole No. 111

ATHLETIC RESEARCH SOCIETY.

REPORT OF THE SECRETARY-TREASURER.

JOSEPH E. RAYCROFT, M. D., PRINCETON UNIVERSITY.

Meeting called to order at 10.45 with President Bowen in the chair and Doctor Modesitt, secretary pro. tem.

Since the minutes of the previous meeting had been sent to every member they were not read.

The report of the treasurer was read and ordered filed.

Mr. Bowen read his presidential address. (Page 60.)

Dr. John Brown, Jr., presented the report of the committee on "The Definition of an Amateur." (Page 66.) This report was freely discussed, among others, by Mr. Ball, Doctor Sargent, Mr. Ehler and Mr. Barnes.

It was voted that the report of the Committee on Amateurism be accepted and adopted; that it be published as a "first report"; and that the committee be continued with instructions, to proceed further with its study, receive suggestions from all interested persons and organizations; and to submit such supplementary reports from time to time as it may deem wise.

It was voted that the address made by Mr. Bowen be published and circulated with the report on "The Definition of an Amateur."

The report of a special committee to consider and report upon a formal recommendation of someone to be appointed director of athletics at the Panama-Pacific Exposition to fill the vacancy left by the death of Mr. J. E. Sullivan, was considered and adopted unanimously. (Page 73.) The question as to the kind and amount of publicity that was desirable on this report was referred to the executive committee for decision.

Mr. William Ball presented the report of the committee on "The Formation of an Honor Code for all Competitive Sports." After favorable discussion, the report was adopted. (Page 75.)

Mr. C. E. Patterson of *Collier's Weekly* gave a very interesting

description of the Mercantile Amateur Baseball League, and discussed the question of amateurism in its relation to eligibility for college baseball teams. He maintained that a man who had not played professional ball for a number of years should be considered eligible for a college team. He expanded and illustrated his position on this question by saying that in his opinion Ty Cobb or Frank Gotch should be considered eligible for membership on any college team if they were *bona fide* students and were keeping their scholastic work up to grade.

Dean Holgate of Northwestern University made an address in which he said that his experience as dean led him to conclude that a losing football team had little or no influence upon the number of students that attended the University. During ten years when Northwestern had a losing football team the attendance in the College of Liberal Arts steadily increased from 650 to 1200. During two years when there was no football in college the increase in attendance was regular and unaffected by the fact that football was not played. On the other hand, during a period when the football team was relatively successful there seemed to be a falling off in the rate of increase among men, with an increased attendance of women students. There was a noteworthy stimulation in the attendance of men students following the announcement of the gift of a new gymnasium and the provision for more facilities for general games and exercise among the students.

After some discussion it was voted that the executive committee be requested to consider the advisability of having a stenographer at future meetings to make a record of the discussions.

Mr. Ehler brought to the attention of the meeting the campaign conducted in the columns of *Puck* in favor of the substitution of compulsory military training for intercollegiate athletics. This matter was referred to the executive committee for consideration.

It was voted that a committee of three be appointed by the president to organize a campaign for increasing the membership of the Athletic Research Society.

The nominating committee placed the following names in nomination as officers for the coming year:

President, Prof. Wilbur P. Bowen.

Vice-president, Dr. Henry F. Kallenberg.

Secretary-treasurer, Dr. Joseph E. Raycroft.

Executive committee (with the understanding that these may be replaced by the representatives who may be appointed from the different national groups):

Dr. J. H. McCurdy.

Dr. Paul C. Phillips, National Collegiate Athletic Association.

Mr. Lory Prentiss, secondary schools.

Mr. E. B. DeGroot, playgrounds.

Dr. George J. Fisher, Y. M. C. A.'s
Mr. William A. Stecher, turners.
Dr. C. Ward Crampton, public schools.
Dr. John Brown, Jr., rural organizations.
Mr. Alexander Campbell, Federated Boys' Clubs.
Mr. Elbert Beeman, Sunday School League.

The meeting was one of the largest and most valuable that has been held since the society was organized. The addresses were excellent; the reports represented a large amount of conscientious work of great value; and the discussions were definite and to the point. There has come about a better understanding of the purposes and possibilities of the organization and there is evidence that the influence of the work done by members of the Society during the past few years in promoting clean sport and in establishing higher standards in amateur athletics is becoming more effective.

The outlook for a successful year is most encouraging.

NATIONAL FEDERATED COMMITTEE.

The Federated Committee elected the following officers:

President, Dr. J. H. McCurdy.

Secretary-Treasurer, Dr. J. E. Raycroft.

Official delegates (These delegates may be replaced later by other appointments from their respective national groups).

Dr. Paul C. Phillips, National Collegiate Athletic Association.

Mr. Lory Prentiss, secondary schools.

Mr. E. B. DeGroot, playgrounds.

Dr. George J. Fisher, Y. M. C. A.'s

Mr. William A. Stecher, turners.

Dr. C. Ward Crampton, public schools.

Dr. John Brown, Jr., rural organizations.

Mr. Alexander Campbell, Federated Boys' Clubs.

Mr. Elbert Beeman, Sunday School League.

The minutes of the meetings have not at date of publication been forwarded to the editor for publication.

SOME CURRENT ATHLETIC PROBLEMS.*

W. P. BOWEN, YPSILANTI, MICH.

During the seven years of its existence the Athletic Research Society has been making a study of two great problems: the problem of an adequate form of organization for administering and controlling the amateur sport of the United States, and the general problem of amateurism. The work has been done by a few busy men, yet good progress has been made. One of the greatest gains to be observed is the growing conviction among a wider circle of men that the kind of study undertaken is well worth while. It is being realized more and more that there has grown up rapidly around us a complex athletic situation of enormous proportions in which opinions are rife, partisans are aggressive, various interests are clamoring for recognition and support, and excited advisers are shouting their demands. The field, like the battle front in Europe, is too wide for any one to see it all from his place of observation. Such a situation calls for careful investigation by unprejudiced men to find out where we are and which way we are going, and then vigorous educational measures to spread the truth. Such, as I understand it, is the function of the Athletic Research Society.

A new organization for the control of sport is made necessary by its enormous growth in new fields. In addition to the athletic clubs, which were the only promoters of sport when the A. A. U. was formed, it is now being fostered and encouraged everywhere by playgrounds, schools, colleges, universities, social settlements, church and Sunday-school leagues, boy scouts and many smaller organizations, and since unity is important in such a field there is need for a democratic organization in which all the interests will be represented. Coöperation by all is essential; any attempt on the part of one interest to dictate to all the others or to monopolize control is, like all other schemes in the interest of one class, destructive of best results and in the end suicidal for the group attempting it. The study thus far points to some form of federation as a kind of organization best suited to American ideals of government and to the needs of the situation.

In the study of amateurism the most important advance, as it seems to me, is the plan of defining an amateur in positive terms and presenting the amateur spirit as an ideal, rather than to limit our methods of promoting it to negative statements and prohibitive laws, as was formerly done. Law enforcement in a democ-

*Presidential address before the Eighth Annual Meeting of the Athletic Research Society, Chicago, December 28, 1914.

racy depends for its success upon the reasonableness of the laws and the education of the people concerned. The slight interest in amateurism to be found in our schools and colleges and the indifference to the enforcement of rules concerning it are largely due to lack of positive and effective teaching of the true merits of the case. If amateurism is to stand and gain ground in America it must be understood and approved by the athletes and the general public as it never has been. This calls for a positive definition of an amateur in terms that will be plain to the average man and an explanation of its desirability that will appeal to him. It must be simple and straightforward and free from any learned or pedantic sound if it is to meet with general favor. If we can agree on a definition of an amateur that is so brief and to the point that it forms one short, crisp sentence it will much more easily gain the popularity we want it to have than otherwise.

As to the meaning of amateurism, we will, I am sure, have no disagreement. We will agree that amateurism is concerned with play and professionalism with work. We will agree with Bliss Perry that "the amateur works for love, not for money; he cultivates an art or a sport because of a taste for it; he is attached to it, not because it earns him a living, but because it ministers to his life." We will agree with Simon Strunsky when he says: "The amateur spirit is the spirit that places the game above the victory; which takes joy in the perfect coördination of mind and muscle and nerve; which plays to win because victory is the best test of ability, but which is all the time aware that life has other interests than the standing of the clubs." I hope we can agree upon a definition that can be sent out for discussion and education, because that is the natural way to begin the educational campaign that must be waged from now on.

In specifying what acts shall forfeit a man's amateur standing we must be consistent with our definition of an amateur. The cause of amateurism has suffered long enough from the custom among governing bodies of prohibiting all objectionable acts by coupling them with professionalism. The result is that the public has a false notion of amateurism and a contempt for it as an inconsistent jumble of petty technicalities. Take the case of playing under an assumed name as an example. We may wish to prevent players from going under false names, but it has no more to do with amateurism than any other form of lying. Probably ten boys play under false names to prevent their parents from knowing that they are playing for every one that does so for other reasons. Even if a man does change his name to hide his professionalism, such an act has nothing to do with his amateurism, which he forfeited before by acts of another kind. The same is true of playing against professionals and at unsanctioned games. We may be right in prohibiting such things, but there is absolutely no excuse for muddling the problem of ama-

teurism by dragging things into it that are fundamentally foreign to the idea. If anyone doubts the need of stating a positive definition of an amateur, let him look at the laws by which most governing bodies define it and see how many times they have forgotten what amateurism means. It would not be surprising to have them declare all men professionals who play with any other than the "official" ball.

A friend of mine once said that he had always accepted the idea of amateurism as he had his religion, never thinking of questioning it or inquiring into its nature, and this view is altogether too common. We have taken a lot of things for granted which will still bear study and discussion with profit, and have assumed an identity of amateurism and sportsmanship that is not warranted by the facts. One who reads the whole literature of the subject must admit that the argument for amateurism is not so sweeping as we have been wont to assume, and there are wide differences of opinion among good thinkers. Price Collier says that professional athletics is nothing more than "a debauchery of brutality," and that "there is nothing more degrading than to give all one's time and energy to the physical side of life." When we consider that several millions of our countrymen give all their energies to the physical side of life as a necessity, this view is rather too extreme, at least to be accepted by those few millions just mentioned. It smacks somewhat of the snobbery of the leisure classes of society, and if we want to put amateurism on a basis where it will commend itself to the American public as a whole we must keep it clear from any possible taint or suspicion of snobbery. Some say frankly that they consider amateurism as a social distinction, and think it a waste of time to try to make the common people appreciate it. There is wide difference of opinion as to the influence of the professional athlete. One writer says that nothing could be more demoralizing than the presence of the professional baseball leagues with their paid players, yet so keen an observer as Strunsky gives it as his opinion that "only in professional sport does the true amateur spirit survive." He compares the professional games with the college games and thinks the former "much nearer the true heart of the play instinct." A university professor who has recently written vigorously in condemning the evils of college sport sees no place for any distinction between the amateur and the professional and thinks that the weak attempts to make such a division are a large part of the cause of the dishonesty he finds so prevalent among college athletes. The late Bishop of London said in 1901 that he considered England's greatest weakness to be too much amateurism.

Some of the best friends of amateurism believe that what we need is a more rigid enforcement of law against professionalism in schools and colleges. I have hoped until recently to have Caspar

Whitney, who has always stood firmly for this principle, to be present at this meeting and speak in defense of it, but he is on duty in Mexico City and unable to be here. He writes, however, in characteristic vein, as follows:

"If I were to be near Chicago I'd gladly prepare an address for the meeting. I am, of course, fully alive to the obstacles in the way of the enforcement of amateurism in schools and colleges, but I believe the greatest by far to be: first, the premium which is placed on mere success—victory over rivals; and second, the half-heartedness, the hesitation of the men upon whom rests the duty of enforcement. I see much excuse for the first but none for the second. The keynote of us Americans in our private attitude toward our problems in politics, in social evils, in industrial inconsistencies, in sport, is hypocrisy. We discuss, we orate, we make rules, then forthwith we work the other angle. We refuse to grapple with them sincerely and vigorously. The way to enforce amateurism in schools and colleges is to *enforce it*, and if every individual in authority did so the problem would be solved. Good luck to you, but for God's sake *act* and don't *talk* so much."

I have always had the greatest respect for Mr. Whitney's attitude toward sport and his keen analysis and fearless criticism of its deficiencies, and there is much truth in his note just read. He, of course, knows as well as we do that this body has no direct power to enforce any rules. I am convinced, however, that by a thorough study of the matter and a better statement of the case we can go far in convincing those in authority that it is worth while; evidently many of them do not think so now.

Another question of athletics upon which there is difference of opinion and the merits of which I believe we should investigate is the custom of recruiting or scouting for players. By this I refer to the practice of looking for promising athletes and inducing them by one means or another to attend the institution. This work is carried on by alumni and coaches chiefly. Sometimes it is without the knowledge or approval of the authorities of the institution; sometimes it is done under their direction. Personally, I have always been inclined to look upon this practice as akin to the methods of the sneak thief; as if the coach, admitting to himself his own lack of ability to make good, proposed to get around his own failure by hunting up players who have been coached by a better man. It is evident, however, that I ought to look further into the matter before forming such a radical opinion, for a great many capable and upright men approve the practice—at least their acts and general behavior indicate their approval—although I have not succeeded in getting any considerable number to defend it. To judge from appearances, many men to be found among alumni, coaches, faculty men, principals and presidents of institutions, and on governing boards, have seen a vision in recent

years that leads them to sidetrack athletic sports from what we physical directors have been accustomed to think they should be used for and to use them instead as a means of booming educational institutions and thereby promoting education among men. In this vision they have seen a winning football team draw a heterogeneous mass of undergraduates together and weld them into a united and loyal band of supporters as nothing else ever did. They have seen rival fraternities whose members once fought shamelessly for places in the back seats meekly follow the dictation of the yell-master; they have even seen the former hoodlums and hereditary foes of everything scholastic in the wars between town and gown fill up the cheering section and join in the songs and yells designed to disconcert a common enemy. It is like the unifying effect of a successful foreign war upon a decadent European state. It is further believed that in the enthusiasm of such occasions we have an unprecedented opportunity to infuse moral ideals into the entire group of spectators.

More than all that, they have in this vision seen athletics, and the publicity athletic contests bring, lead men to seek an education. It has apparently done more to stem the tide of desertion that was rapidly turning high schools and colleges into seminaries for young ladies than any other attraction ever planned. They see in many a high school scores of sturdy young men who but for athletics would be driving the grocery wagon or ringing up fares on the trolley car. Many a principal of schools feels that if he can hold these husky youths in school and with them win athletic victories he will win the admiration and the financial support of the business men of the place. Many a small college, started in a small way by the church in its missionary zeal, has found itself in danger of bankruptcy and desertion and has barely made the grade, apparently by the aid of a football team with a string of victories. The president feels the seriousness of the situation and applies the pressure to the coach and the team. The team responds with a feeling of loyalty and friends and alumni applaud their heroism. The newspaper joins in the enthusiasm as it never did for things educational before, and education gets its biggest advertisement in the history of the world. After all, no matter how good a college we have, it can do a man but little good unless he goes there, and athletics, conducted in this way, brings him.

In this vision and in the things it has brought about we see another problem in the ethics of sport; not so much as to the practice of sport by students as in the use of athletics by institutions of learning as a means of advertising and gaining men and money. As far as I know there has been no adequate study of this problem. In view of the fact that it is used extensively and increasingly it looks like an important problem for this society to investigate—to find out, if possible, what good and what harm are

done by the practice of the aggressive recruiting of athletics and the associated methods of promoting education. The report of the Carnegie Foundation on "Educational Advertising" can well be supplemented, in my opinion, by a piece of research this society is eminently fitted to carry on in this line.

Several times it has been said in former meetings of the National Collegiate Athletic Association that members found themselves enthused by the addresses and discussions and resolved to go home and make a thorough educational campaign for amateurism and clean sport, but that such inspiration had failed to accomplish its purpose and that year after year they made no progress, general sentiment in the country improving scarcely at all. What these men needed was a series of bulletins setting forth in plain and systematic style the facts and principles they wished to have prominent in the minds of faculty and students. Lacking them, the work was not done. I would like to recommend that this society proceed as fast as possible toward the preparation and publication of such a series of bulletins, to do for athletics what bulletins of similar nature have done for hygiene, agriculture and other sciences in late years. I believe that the work can be done and if so, there can be no doubt that it should be done. We need to study amateurism and sportsmanship, make careful inquiry into many practices current in athletics, and publish our findings for the benefit of the cause.

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REPORT OF THE COMMITTEE ON DEFINITION OF AN AMATEUR.*

This report is the result of three years' work and was adopted by the society in the hope that it would lead to further study of this important question. Suggestions will be appreciated and should be sent to Dr. John Brown, Jr., at the International Young Men's Christian Association Building, 124 East 28th Street, New York City.

I. DEFINITION OF AN AMATEUR.

An amateur athlete is one who participates in competitive physical sports only for the pleasure, and the physical, mental, moral and social benefits directly derived therefrom.

II. EXPLANATION OF THE DEFINITION.

1. It includes only those who actually *participate*. Others may be amateur in spirit but not until they enter competitive events is it necessary to consider their standing.

2. The participation must be of a competitive character. No rules or regulations should be construed to prevent any individuals or groups from engaging in social or friendly games or sports.

3. The term "athlete" is used to designate one who participates in *physical* sport. This is to distinguish the athlete from one who engages in other games and sports in which the physical ability of the competitor is not the prime factor; e.g., checkers, yachting, etc.

4. The physical, mental, moral and social benefits should be the *direct* result of the participation and not the indirect result of material or economic advantages gained through participation.

5. Institutional or team loyalty and opportunity for service are proper sources of pleasure or benefit.

III. APPLICATION OF THE DEFINITION.

It is recommended that the following be accepted as the interpretation of the definition when applied to particular violations. In ruling upon individual cases, allowance should be made for youthful and unintentional infractions. Violations should be

*Presented at the annual meeting of the Athletic Research Society in Chicago December 29, 1914.

considered as such only when in the judgment of the governing body they were made deliberately and with knowledge of the facts. The definition should be applied with a view to educating and securing the loyalty and coöperation of the athlete and promoting amateur athletics. A petty violation hastily made by a careless youth should not bar him forever from the joy and training which he ought to have through further competition. As much harm may be done even to athletics—to say nothing of the man—by too rigid legislation, as from overleniency.

A. Violations which Make an Amateur a Professional.

1. Teaching or coaching professional athletes for pay.
2. Competing under salary or for a fee.
3. Competing for a cash prize or for a staked bet.

A professional shall be reinstated only in very unusual cases when in the judgment of the governing body the best interests of both the individual and amateurism can be furthered by such action. In no case shall reinstatement take effect within one year after violation. A professional shall not be reinstated a second time.

B. Violations which Disqualify an Amateur for Financial or Mercenary Reasons.

4. Competing for or accepting inducements other than approved medals or trophies.
5. Competing for or accepting reimbursement exceeding actual expenses involved as a competitor.
6. Competing for or accepting any share of gate receipts.
7. Disposing of prizes for personal gain.
8. Betting upon a contest in which the bettor is a participant.

C. Violations which Disqualify an Amateur for Moral Reasons.

9. Competing under an assumed name.
10. Misrepresenting facts regarding eligibility, ability or performance.

D. Technical Violations which Disqualify an Amateur.

11. Competing with or against professionals or disqualified athletes for a prize or in open competition.

Note.—Permission may be granted by the governing body to allow amateurs to compete *against* professionals on special occasions. Under no circumstances will amateurs be allowed to play on the same team with professionals.

12. Promoting or officiating at professional contests.

Note.—Except as provided for in preceding note.

13. Promoting amateur contests for personal gain.

Note.—This does not apply to institutions, organizations or teams when the proceeds are devoted to the uses of the organization and not to the personal benefit of the team or individuals.

14. Being a party to any attempt to induce an amateur to dishonorably violate his standing as an amateur.

Note.—See separate statement regarding organizations and officials being held responsible for the manner in which amateur contests are promoted and conducted.

Reinstatement for violations 4 to 14 inclusive should be the exception rather than the rule, and should never become effective within six months after the violation. The nature and seriousness of the violation, the age, intelligence and deliberation of the athlete and the effect of the action of the governing body both upon the individual and upon amateur sport in general should be the determining factors. Only in unusual cases should a disqualified amateur be reinstated a second or third time.

E. Violations which Make an Amateur a Non-competing Amateur.

Teaching or supervising, for pay, amateur athletics or physical education in an institution, organization, club playground, etc.

Note.—See definition and reinstatement of non-competing amateur.

IV. DEFINITION OF A NON-COMPETING AMATEUR.

In justice to the rapidly increasing number of men who, because of their interest in athletics from an educational standpoint, devote all or part of their time as physical directors, school teachers, playground directors, church and settlement workers, etc., the committee recommends the adoption of the following definition:

"A non-competing amateur athlete is one who has maintained his standing as an amateur in all other respects, except that he has been engaged for pay as an instructor in amateur athletics."

From all sides the spirit of the definition suggested has been most heartily approved. The injustice of classing men who are devoting their lives to the promotion of clean wholesome amateur sport from the highest motives with out and out professionals is apparent to all. Not that professionals are in any sense less honorable in any way, but it is manifestly unfair to classify as professionals those who are doing their utmost to stem the tide of professionalism in so far as it lowers the standards of the true amateur principle.

The purpose of the proposed definition is to place all those who are truly amateur at heart and in conduct but who are receiving remuneration for the services in promoting, supervising or teaching amateur athletics in a class to be known as non-competing amateurs.

Reinstatement of Non-competing Amateurs.

To make it possible for individuals who wish to retain their amateur standing to engage as instructors in playground work and other forms of educational play and athletics for a part of their time, the following is suggested:

"Amateurs who wish to teach for pay as indicated in the first paragraph of this section, without permanent loss of amateur standing, must secure permission so to teach as 'non-competing amateurs' before entering upon their duties. A man who has become a 'non-competing amateur' by reason of such teaching and who wishes to be reinstated to full amateur standing must file his application for reinstatement immediately upon the termination of the time named in the application for permission to teach. This application for reinstatement must be accompanied by an affidavit to the effect that the applicant has maintained his standing as an amateur in all other respects except that he has been engaged for pay as instructor as specified in the application which was granted for permission so to teach and that no special opportunities were afforded or utilized for him to acquire greater skill along the lines in which he wishes to compete.

"Permission to teach as a 'non-competing amateur' and reinstatement to full amateur standing at the termination of the period specified may be granted more than once at the discretion of the proper authorities in charge of amateur athletics."

The question of the reinstatement of non-competing amateurs who have devoted their entire time for a period of years to the teaching or supervision of physical education is not so easily settled. Unquestionably there are many physical directors who could be reinstated after a year's retirement from their chosen career without working any hardships on those with whom they may later compete. On the other hand, there is a much larger number of younger men who come under the class of non-competing amateurs in that they are amateurs in every sense except that they are teaching amateurs for pay. But they are men possessing unusual skill, which is their primary motive in choosing their profession. Furthermore, the very nature of their work gives them added advantages to increase their proficiency. In such cases it is not quite so easy to pass upon the advisability of their reinstatement to full amateur standing. This is particularly true of those who have been engaged primarily to *coach* the various sports in colleges, secondary schools and clubs and

who devote a large part of their time to actual work and training.

There are those who are absolutely opposed to any reinstatement of non-competing amateurs who have been engaged for full time. There are also a considerable number who favor reinstatement when in the judgment of the governing body the individual in question has not gained unusual skill because of any special advantages afforded by the nature of his work or the terms of his engagement, and when in the judgment of the governing body the best interests of both the man and amateur athletics may be furthered by his reinstatement.

For this reason the following is suggested for consideration:

"A non-competing amateur may be reinstated after a period of one year has elapsed since he last taught for pay. The application for reinstatement must be accompanied with an affidavit to the effect that the applicant has maintained his standing as an amateur athlete in all other respects except that he has been engaged for pay as an instructor in amateur athletics, and that he has not taught for pay during the past year, and that he does not expect to teach for pay again. Furthermore, the governing body must be of the opinion that the athlete has not acquired unusual skill because of advantages afforded or utilized by the nature of his work or terms of his engagement and that the best interests of both the man and amateur athletics will be furthered by his reinstatement. A non-competing amateur shall be reinstated once only except as provided in the preceding statement."

The foregoing interpretations have to do only with the amateur standing of an individual. This must not be confused with the question of eligibility. Amateurism is the one essential that is common to all amateur athletic contests, but it may be only one of a number of elements essential to eligibility. Others may have to do with sex, age, membership, experience, ability, scholarship, etc.

While institutions or organizations may determine their own technical regulations and conditions of eligibility, they must all unite upon a common amateur definition together with its interpretation. In this way only is it possible to unify and standardize amateur sport on a national basis.

The committee recognizes that some of these rulings set a higher standard than may be attained at once in some institutions, and yet, we believe it is wise to recommend these for a national basis toward which all may work so that in a few years every recognized institution and organization will be actually living up to the letter and spirit of the definition of an amateur together with its interpretation.

If the standard is set low enough to allow the present practices of all institutions to continue it would only serve to lower the plans on which athletics are now conducted in many institutions and organizations. On the other hand, if a high standard is

adopted as one that is practical and attainable, it will serve as an incentive to better conditions to all who subscribe to it.

Naturally one of the first questions arising in the minds of those who study this report is: "Can the amateur definition be applied? Is it practical?" We believe it can be applied provided the conditions essential to the successful application of any such law prevail. Education, organization, coöperation, and leadership are necessary.

Through the Athletic Research Society and kindred organizations the broadest education must be given as to the real functions and value of athletics.

The National Federated Committee, representing the various national institutions interested in athletics, must perfect its organization so that it will be a vital factor in standardizing and unifying ideals and regulations.

These national institutions must promote vigorously the adoption of policies and methods in harmony with the National Federated Committee.

State, district, county and city federations should be promoted and organized, bringing together the different clubs and organizations which are conducting athletics on the principles laid down in the national athletic platform.

There is no place for the irresponsible club or the unattached athlete in organized athletics. Every boy and every man should be vouched for by, and held responsible to, a recognized organization. This may mean the school, church, playground, college, Y. M. C. A., settlement, etc.

Only in this way can the amateur definition be applied. Each institution must adopt it and make it national. Each organization or unit in these national institutions will then adopt it.

It will thus become the basis of determining the amateur standing in all federations.

The Spirit of Amateurism.

The spirit of amateurism carries with it all that is included in the definition of an amateur and much more.

The spirit of amateurism stands for a high sense of honor, honesty, fair play, courtesy and temperate living on the part of the participants, hosts or guests, officials and spectators. It stoops to no petty technicalities to twist or avoid the rules or to take an unfair advantage of opponents.

It implies a recognition of the marked influence of athletics in developing organic vigor, physical fitness, intellectual efficiency, moral qualities and social habits. It seeks to increase their value by exalting the standards of all sports.

It is opposed to all practices which are harmful to individuals or to amateur athletics in general, such as playing for money

or gain of any kind, betting, selling prizes, 'proselyting, over-specializing of "star performers" to the exclusion of the "rank and file," etc.

It recognizes the need of wise organization and supervision of athletics and coöperates in making these efficient.

New Form of Registration Suggested.

More important than the usual form of registration would be the declaration of amateurism on the part of each individual at the time when he first enters competitive athletics. We therefore recommend that the following statement be adopted as a form of amateur declaration.

Amateur Declaration.

I have read the definition of an amateur athlete and declare myself as such. I have also read the "Spirit of Amateurism" and am in hearty sympathy with it and hereby pledge myself to its support.

Date..... Signed.....

Certified by.....

Position..... Organization.....

COMMITTEE:

JOHN BROWN, JR., M. D., *Chairman.*
R. TAIT MCKENZIE, M. D., M. P. E.
W. H. BALL, M. P. E.,
H. F. KALLENBERG, M. D.,
G. E. JOHNSON,
G. W. EHLEK.

**LETTER RECOMMENDING E. B. DEGROOT AS
DIRECTOR OF ATHLETICS AT THE
PANAMA-PACIFIC EXPOSITION.**

Chicago, Ill., December 28, 1914.

Board of Directors,
Panama-Pacific International Exposition,
San Francisco, California.

Gentlemen:

The broad invitation of the Panama-Pacific International Exposition, to both individuals and groups, to participate in the athletic events of the Exposition, encourages us to respond, as a preliminary to further participation, by making the following suggestions:

That the present program of an extraordinary list of splendidly arranged competitive athletic events be broadened sufficiently, in both content and supervision, to incorporate the educational and social phases of athletic systems. We wish to suggest that the greatest need of our time, in matters athletic, is to present the subject a little less in its relation to a spectacle, and a great deal more in its relation to the finer questions of education and public recreation. The recent development in physical education and social athletic recreation in universities, colleges, schools, Y. M. C. A.'s and public recreation centers, gives warrant for our suggestion, no less than a promise of greater and broader public interest in the Exposition itself. We see in the Panama-Pacific International Exposition the proper place and environment for endeavoring to make coherent, in national effort, a program of athletics including many of the better, finer and more necessary phases of play, recreation and sport, than now presented in mere championship events.

We further suggest that, in the light of the untimely death, and consequent loss, of Mr. James E. Sullivan, as Director of Athletics, there is need of comprehensive leadership and supervision for the forthcoming events. This need will be particularly conspicuous if there is a broadening of the program as suggested above. In this connection, we wish to urge the appointment of Mr. Edward B. DeGroot, to fill this position. Mr. DeGroot's appointment is urged on the following ground:

He is eminently qualified to give the superior, impartial leadership and supervision demanded by the office of Director of Athletics.

He possesses a background of practical experience, on a large scale, in all phases of physical education and athletic sports in

both educational institutions and in the organization and administration of the work in the South Park System in Chicago, which involved an expenditure for competitive and recreational work of \$9,000,000, with an annual budget of \$300,000. His work in these positions has demonstrated a very high grade of organizing and administrative ability.

He is a public recreation expert of high national and international reputation.

Mr. DeGroot has been retained by the San Francisco school board to develop physical education, public school athletics and social centers. He has also been retained as a lecturer on public recreation in the Summer School of the University of California. He will, therefore, be in residence, within a few weeks, in San Francisco.

Finally, we urge Mr. DeGroot's appointment because he is eminently qualified to carry on the work in physical education and athletics at the Panama Exposition in a way that will not only reflect credit upon the management of the Exposition, but will also be of great value in establishing high standards for such work at future expositions.

Respectfully yours,

JOSEPH E. RAYCROFT,
Secretary, Athletic Research Society.

AN HONOR CODE FOR ALL COMPETITIVE ATHLETICS.*

W. H. BALL, INTERNATIONAL COMMITTEE Y. M. C. A., NEW YORK.

No array of statistics or series of arguments is necessary to convince this body that the interest in competitive athletics is stronger to-day than ever before. A steadily increasing number of participants and spectators is evidenced on every hand. Hundreds of thousands of our adolescent youth manifest the keenest interest in some form of athletic contest.

It is significant that this interest often dominates the individual during the years that life's habits are firmly fixed and character largely determined. The mere statement of such facts indicates at once that athletics may become a vitally potent factor in the weal or woe of the individual and national citizenship of our country.

An *amateur athlete* participates purely for the pleasure of the *game*, for in their true essence athletics are simply forms of play, and play is now recognized as nature's method of education. This suggests, therefore, that athletics have large educational and character-training values, which is true.

On this basis it is of the greatest importance that the amateur's motive in participating, as well as his attitude and conduct toward teammates, officials and public should be such as to develop the qualities of a thorough gentleman rather than those of a "sport." It is thus very evident that every effort should be made to insure that conduct unbecoming to a gentleman should never be indulged in.

We believe that our athletics and play life throughout the nation should be maintained on the highest possible basis of gentlemanly conduct and true sportsmanship, and submit the following as

THE AMATEUR'S HONOR CODE IN COMPETITIVE ATHLETICS.

1. A true amateur athlete will never intentionally make misrepresentation regarding his eligibility, ability or intentions, nor will he continue competing as such after he has ceased to be in sympathy with the spirit of amateurism.

2. Athletic rules will not be ignored or evaded either in letter or spirit but will be considered as mutual agreements between contestants for the purpose of providing a basis of honorable

*Presented at the eighth annual meeting of the Athletic Research Society in Chicago, December 29, 1914.

competition between gentlemen. The letter or spirit of the rules will no more be ignored or evaded than will a gentleman's "word of honor."

3. Every honest and earnest effort will be made to win a contest but a dishonorable victory will not be accepted.

4. An amateur will always be loyal to his teammates in every honorable endeavor and do his utmost to prove a worthy representative of his institution or club.

5. Opponents will be treated as friends and honored guests even when they do not reciprocate. No unfair advantage will be taken of them under any circumstances. Good plays will be suitably acknowledged.

6. Officials will be considered as impartial and competent arbiters. Decisions will be accepted without dispute even when they are apparently unfair. Advantage will not be taken of lax rule enforcement. Personal abuse or ill feeling of any kind will not be publicly manifested even when an official proves incompetent or dishonest.

7. Contestants will not attempt to "play to the grandstand" for publicity or applause. Appreciation from spectators will be taken for granted and not acknowledged.

In further consideration of the foregoing we now discuss

THE AMATEUR'S ATTITUDE TOWARD

- I. Athletics in General.
- II. Teammates.
- III. Opponents.
- IV. Officials.
- V. Spectators and Public.

I. *Athletics in General.*

An amateur athlete who participates in physical sport does so fundamentally for pleasure. Motives, however, are nearly always more or less mixed, but the primary and controlling motive of the true amateur will always be the enjoyment of the game. The victory, the prize, or the plaudits of an audience will be of minor importance.

True amateurism stands for a high sense of honor, honesty, fair play, courtesy and temperance on the part of competitors, officials and spectators. It stoops to no technicalities to twist or evade rules to gain advantage over opponents.

The distinguishing feature between the amateur and others is that of motive. When an amateur knowingly claims, tacitly or otherwise, to be what he is not, or misstates in any way his qualifications, or makes an entry for a contest without any intention of

competing, or competes without doing his best, or knowingly violates the spirit of the contest rules, he has ceased to be an amateur in spirit and is in honor bound to discontinue competing as such.

To develop a high purpose and noble character is of larger value than to win a game or even a world's championship.

Defeat is not of itself a disgrace nor is victory necessarily an honor. "An honorable victory or none" is a more worthy and sportsmanlike standard than "win at any cost, by fair means if we can or foul if we must."

In such a standard there is no place for a double code of ethics, one for the public and quite another for the training quarters.

We therefore recommend that it be considered unsportsmanlike, ungentlemanly and dishonorable for a true amateur

1. To intentionally make any misrepresentation regarding his eligibility, ability or intentions or to continue competing as such after he has ceased to be in sympathy with the spirit of amateurism.

2. To ignore or evade athletic rules either in letter or spirit or to fail to consider them as mutual agreements between contestants for the purpose of providing a basis of honorable competition between gentlemen.

3. To fail to make every honest and earnest effort to win the contest and to refuse to accept a dishonorable victory.

II. *Teammates.*

Teammates have every reason to expect from their associates enthusiastic support of the team policy and program, including faithful adherence to training regulations and utmost endeavor or sacrifice to insure perfect team coöperation.

Therefore we recommend that it be considered unsportsmanlike, ungentlemanly and dishonorable for a true amateur to fail to be loyal to his teammates and in every honorable manner to do his utmost to prove a worthy representative of his institution or club.

III. *Opponents.*

Is there any good reason why gentlemen should cease to be gentlemen simply because they meet on the athletic field rather than on the street, in the club or at home?

Athletic contests are often essentially combative but they are not of necessity "fights." They are honorable struggles for supremacy in a play game. The contest is one of skill and endurance. Strategy will often be employed but underhand trickery, or deceit, or brutality, never.

Nothing will add so much to the genuine pleasure of all concerned as to have contestants do unto others as they would be done by, and to do it first, and especially to commend in no uncertain manner evidences of clean sport and skillful performance on the part of others.

Therefore we recommend that it be considered unsportsman-like, ungentlemanly and dishonorable for a true amateur

1. To treat opponents other than as friends and honored guests even when they do not reciprocate.
2. To take unfair advantage of them under any circumstances.
3. To fail to suitably acknowledge good plays.

IV. *Officials.*

Officials are used in order that there shall be absolutely "fair play" between opponents, but no one who has had experience will question the statement that it is an exceedingly difficult matter for an official of an athletic contest to serve to the mutual satisfaction of all the interested parties. Every decision helps or hinders one side or the other.

Presumably only competent and honorable gentlemen are selected to serve as such responsible officials. The very best men, however, make mistakes.

It is only as competent officials are treated as honest in intention and capable in service that we can expect to find qualified gentlemen willing to continue to serve in these capacities.

Therefore we recommend that it be considered unsportsman-like, ungentlemanly and dishonorable for a true amateur to

1. Dispute any official's decision even when it is apparently unfair.
2. Take any advantage of lax rule enforcement.
3. Personally abuse or show ill feeling of any kind in public even when an official proves incompetent or dishonest.

V. *Spectators.*

The standard of sportsmanship *practiced* by leading athletes becomes the ideal of a large number of less prominent but very important athletes and teams.

Every public athletic game becomes, *ipso facto*, a powerful and important educational force for good or ill to the hundreds and often thousands of spectators who witness the contest.

While amateur games are not conducted primarily for the spectators but rather for the participants, it is probable that spectators will always be an important factor in much of our athletics. They are a vital force in determining the conduct of competitors, for the latter are quite sensitive to the approval or disapproval of an audience.

We therefore appeal to every true sportsman and gentlemanly spectator to unite in appreciation of every evidence of honorable action or spirit on the field *by applause* and in condemnation of every dishonorable action *by silence*.

Therefore we recommend that it be considered unsportsmanlike, ungentlemanly and dishonorable for an amateur athlete to fail to manifest other than a high sense of honor, honesty, fair play, courtesy and temperance, alike before teammates, opponents and public.

We furthermore recommend that it be considered as unbecoming an amateur to seek to play to the "grandstand" and thus secure publicity or applause. When applause is given, it shall be taken as a matter of course and not be publicly acknowledged.

THE MEASUREMENT OF HEIGHT.

LEONHARD FELIX FULD, ASSISTANT CHIEF EXAMINER, MUNICIPAL
CIVIL SERVICE COMMISSION, NEW YORK.

The measurement of the height sitting is taken because when this measurement is large in proportion to the stature of a given individual it indicates vitality. Large stature is more a question of length of legs than length of trunk and the vitality of any given individual depends upon the size of his vital organs—his heart, lungs, stomach, liver, kidneys and intestines—rather than upon the length of his bones or the size of his muscles. There are two types of individuals from the point of view of this measurement of the height sitting. Men with long legs and small short trunks represent the type of low vitality; long trunks and comparatively small limbs represent the type of men who have large vitality. In taking this measurement of the height sitting it must always be emphasized that this is a measurement of vitality. The average proportion of the height sitting to the stature in women is 52.2 and in men it is 52.07. In women the proportion is larger because as a general rule women have shorter legs than men. From birth to adult life the thigh increases five times in size and the leg four and a half times, while the sitting height increases only three times. This is due to the fact that the trunk grows less after birth than the legs. The relation of one measurement to another expressed in percentage is called an anthropometrical index, and such an index is expressed as follows: Take the smaller of the two measurements to be compared and multiply it by one hundred and then divide the product by the larger measurement. The quotient is expressed as a percentage. The height sitting-stature index which expresses in the form of a percentage the relation between the height sitting and the stature of an individual is one of the most valuable vital indices in anthropometry.

The proportion of the height sitting to the stature changes during the period of growth. This fact was recognized as early as the days of Aristotle, who wrote about this measurement. During childhood the upper part of the body is longer than the lower part of the body, but this proportion changes as growth increases. The proportions of these two measurements have been exhaustively treated in a recent work by Paul Godin, a military surgeon and an anthropometrist of considerable reputation. He has taken a number of boys in the schools in which they are educated in France at the expense of the government with a view of training them for the military profession and measured them every six months from 13½ to 17½ years. At eighteen these

boys enter the regular army. He found the height sitting-stature index to be 52 per cent at each semiannual period excepting the 14½-, 15-, 15½- and 16-year periods, when it was 51 per cent. This work of Godin is the most painstaking piece of anthropometrical research work which has thus far been carried to completion. More than one million individual measurements were taken and recorded and the average length of legs, the average height sitting, the excess of legs, the increment of legs, the increment of height sitting, the proportion of legs to height sitting, the length of legs as compared to length of trunk are all carefully computed for each semiannual period from 13½ to 17½. It is regretted that limitations of space forbid the reproduction of more of Godin's work in the present paper. It is strongly urged, however, that physical examiners acquaint themselves with the work and study it carefully at their leisure.

In the taking of all measurements of height, including the measurement of height sitting as well as the measurement of height standing, the question arises, What is the individual's normal height? Should the subject be required to sit or stand rigidly erect or easily erect? In other words, should he be required to sit or stand as he usually sits or stands, or should he be asked to make himself as tall as possible? There are those who maintain that what the physical examiner desires is the subject's usual height and that any other height is abnormal. This is believed to be the view taken by Professor Sargent of Harvard University. It is submitted, however, that from the anthropometrist's point of view this is an unsatisfactory standard. What the anthropometrist wants is a measurement which will be uniform and exact. Only by approaching the extremity or limit can accurate results be obtained. If the subject is requested to stand or sit as straight as usual, some individuals may understand that this request permits them to relax or slump more than others. Some individuals with tall bodies and long muscles may ordinarily relax so much as to lose an inch in stature while others may not lose one-quarter as much. The chance for error is too great when the examiner attempts to measure the usual as distinguished from the extreme height of an individual, to permit the examiner to make use of this system of measurement. Another caution with regard to the taking of the height should be mentioned at this point. Some subjects seem to think that they can increase their height by raising their chest. This is an entirely erroneous impression. The height can be increased only by straightening the ankles, hips and spine, and if a subject raises the chest too high he will actually decrease the height. The subject should be cautioned against this error whenever the examiner notices that he falls into it, and the examiner should also be careful to insist upon the eyes being directed to the front, the head being uncovered and the weight being evenly

distributed on both feet. The buttocks, the spine between the shoulders and the back of the head must always touch the measuring rod.

We have insisted in this series of papers upon the necessity of having the subject stripped for the examination. When dealing with men and women of mature years and of reasonable intelligence, the physical examiner should insist upon this requirement whenever it is expedient to do so. In the case of children, on the other hand, and particularly in the case of public school children, it is sometimes impossible to do so. In Boston, for example, it was for a long time impossible to take any measurements of school children because the school authorities refused absolutely to require the children to remove their shoes in school when they were weighed and measured. In such a case, particularly when the number of measurements to be taken is very large, it is impossible to make allowance for the weight and thickness of the children's heels. Nearly all public school children wear shoes that are manufactured in factories. Nearly all manufacturers of factory-made shoes put on their shoes heels of the same weight and thickness and these heels are worn down in a majority of cases to a given extent before they are discarded. By taking the average shoe which is half worn or measuring a hundred such shoes you get a value which is sufficiently accurate. Indeed, it is as accurate for practical purposes as if the shoes were removed before taking the measurement. In proportion as we have a large number of observations we can allow for such factors as shoes without influencing the result appreciably. The measurement of the height with the shoes removed is much to be preferred because it is much more accurate, but when the number of measurements to be taken is very large, measurements taken while the subjects have their shoes on are probably sufficiently accurate for practical purposes although by no means as satisfactory from a scientific standpoint as would be measurements of height taken after the shoes had been removed.

A measurement which is in many respects similar to the measurement of the height sitting is the measurement of the length of trunk. This measurement does not include the head and neck and is therefore one of the most important vital measurements. It measures the length of the vital box of the body. This measurement was at first taken from the tops of the shoulders, but this measurement has now been very largely discarded because it is too inaccurate, the measurement changing without any alteration in the length of the trunk. The second method of taking this measurement is by recording the length of the trunk from the seventh cervical, but because of some difficulties in locating this anatomical landmark, the measurement from the episternal notch is now being strongly recommended by some physical examiners. In taking the measurement of the length of trunk from the

seventh cervical the subject should be directed to seat himself on the box of the stadiometer, have his sacrum touch the rod and draw his heels in until they touch the box. It is to be preferred that the subject be stripped for this measurement but in the case of women it is sufficient to request them to remove their collars so that the seventh cervical can be easily located. After an examiner has measured a large number of subjects he will be able to locate the seventh cervical without any conscious effort and his finger will unconsciously be placed in the correct position on the spine without varying $\frac{1}{2}$ cm. from the exact location of the seventh cervical. This cervical is a very prominent one because it is in normal individuals a little longer than the others. In many subjects it stands out like a big bunch on the spine and can be seen straight across the room; in stout individuals, on the other hand, it may be more difficult to locate and in such cases the examiner is often assisted by requesting the subject to bend his head forward which brings out the angle of the seventh cervical more prominently. There are thus three methods of locating the seventh cervical—inspection, touch and bending the head forward. After the seventh cervical has been located, there is another difficulty connected with the taking of this measurement and that is the exact point at which it should be taken. The seventh cervical has an area of about one square centimeter and the question arises whether the measurement should be taken at the top, the bottom or the middle of the cervical. Let the examiner take a sharp instrument such as a sharpened lead pencil and, holding his own eye at the level of the pencil, place the point on the middle of the seventh cervical and read the mark on the stadiometer which is in a direct line as measured by the pencil from the center of the seventh cervical to his own eye. This measurement will be found exceedingly difficult for the novice because it involves the measurement of an exceedingly small point which is difficult to locate, but with a little experience any individual of average intelligence can obtain the necessary ability to measure it with reasonable accuracy.

Because of the difficulties connected with the measurement of the length of trunk from the seventh cervical which is located on the back of the subject, many physical examiners prefer to take this measurement from the episternal notch which is located in the front of the subject. This notch is located at the head of the sternum a few inches below Adam's apple. It is easily felt both in men and women and the end of the measuring stick will easily fit into the notch. The only caution which need be impressed upon the physical examiner is that the measuring stick must be held perfectly perpendicular to the box of the stadiometer. In the case of very stout subjects it may be difficult to find a resting place for the measuring stick on the box of the stadiometer because the corpulent abdomen fills the entire box. In such a

case it is probably necessary to have the box of the stadiometer extended. The advantages of the seventh cervical measurement are that the subject is in a position which insures accuracy and that the spine on which the measurement is taken is a fairly steady column of bone insuring a reliable measurement, while the only difficulty connected with the measurement is the difficulty in locating the seventh cervical, which can be overcome by experience. The disadvantages of the measurement at the episternal notch are that the measurement is smaller than the length of trunk since the trunk begins at the apex of the lungs in the thoracic region which is in the neck above the episternal notch and that the notch itself is not a fixed point. It is possible to raise the notch and lower the notch in breathing, particularly if the subject has good control of his sternum. Some examiners request the subject to drop the sternum before this measurement is taken and others request them to raise their sternums as much as possible. It is not advisable to give this latter direction because of the fact that trained athletes can raise their sternums very much while untrained individuals are unable to raise the sternum at all. The only advantage connected with the measurement of the length of trunk at the episternal notch is that the notch is a landmark which can be easily found. The seventh cervical measurement is undoubtedly much more accurate than the measurement at the episternal notch and the latter is only to be recommended for physical examiners who lack the necessary training and experience required for the more accurate and more difficult measurement at the seventh cervical. It should also be noted in this connection that the confining of the height measurements to the three which we have mentioned—the height standing, the height sitting and the length of trunk—is a distinctly modern tendency. Sargent used to take in addition to the height standing, the height at the episternal notch, the height at the navel and the pubic height, and anthropologists take about a dozen more heights. These however do not concern the physical examiner.

THE GRADING OF GYMNASIUM CLASSES.

S. L. OSBORNE, B. P. E., DIRECTOR OF PHYSICAL EDUCATION, Y. M.
C. A., SASKATOON, SASKATCHEWAN, CANADA.

The physical director conducting gymnasium classes is always confronted with the problem of the pubescent boy. The boy feels awkward; and is awkward. Frequently he is made the butt of the class, or at least for the spectators is a cause of misdirected amusement. It is a period demanding the utmost patience and sympathy of the physical educator. It is a critical time. Expenditures encroach on income. The vascular, neural and muscular systems feel the tremendous strain due to the acceleration of body growth. The whole organism is unstable. The result is a marked lack of coördination, endurance and self-control.

Dr. Crampton in his treatise, "Physiological Age—A Fundamental Principle,"* has proven conclusively that the classifying of the young adolescent by a chronological series is unscientific. He has shown that there is no special age for the young adolescent to pass into either of the periods of puberty. Instances were given to prepubescents, pubescents and post-pubescents from the age of 12.75 to 16.75 years. Again he has proven that individuals differ from each other in weight, height and strength according to their maturity and not according to their chronological age. Dr. Crampton closes his valuable paper as follows: "It is my firm conviction, founded upon the evidence herein presented, that all of our observations of the young adolescent, whether they be anthropological, medical, educational or social must rest upon this definite classification." Thus physiological age is the only scientific classification. Hence this paper.

In a study, "Blood Pressure and Heart Rate in Relation to Pubescence,"† the conclusion of the writer further substantiated the findings of Dr. Crampton. This led to the present experiment. Fortunately I received an appointment where I was untrammelled by tradition and precedent. I went to a young city in a young province in our great West. It was the first introduction of scientific physical training in the city and I decided to experiment for one year at least with the boys' classes graded according to their physiological age.

The boys were graded at the time of their physical examination and according to Dr. Crampton's test. Dr. Crampton makes three divisions: first the prepubescents (P_1), those without any visible

*AMERICAN PHYSICAL EDUCATION REVIEW, March-June, 1908.

†Graduating thesis, International Y. M. C. A. College, Springfield, Mass., June, 1913.

hair on the pubes; second, the pubescents (P_2), those with a fine growth of hair; third, the post-pubescents (P_3), which stage begins with the kink or twist appearance of the pubic hair. A total of 213 boys were examined and classified as follows:

P_1	122
P_2	38
P_3	53
	<hr/> 213

The gymnasium classes were divided into four sections: Junior school, Senior school, Junior business, Senior business. These were grouped in the following manner:

TABLE 1.

PHYSIOLOGICAL AGE

Class	P_1		P_2		P_3		Total	Per Ct.
	Total	Per Ct.	Total	Per Ct.	Total	Per Ct.		
Junior School.....	90	42.25	4	1.87	—	—	94	44.13
Senior School.....	3	1.4	19	8.92	31	14.55	53	24.88
Junior Business...	28	13.14	7	3.28	—	—	35	16.43
Senior Business...	1	.46	8	3.75	22	10.32	31	14.55
Totals.....	122	57.27	38	17.84	53	24.88	213	100

Distribution of pupils into classes.

All prepubescents (P_1) were placed in the junior classes as nearly as possible. Pubescents (P_2) and post-pubescents (P_3) were included in the senior classes. A comparison of tables 2 to 5 will show that the senior business boys were by far the most mature group. Quite a large percentage of this group had entered the post-pubescent (P_3) period some little time previous to their examination. For these reasons a larger number of P_2 were included in the junior business class (compare tables 2, 3 and 5). The three prepubescents in the senior school and the one prepubescent in the senior business group were so placed at their own special request. They stated they wished to attend class with their chums. However, it needed but little knowledge to see that they were misplaced. All four instances were types of the delayed pubertal period (see tables 4 and 5).

The following analysis will prove of interest.

Note.—In the chronological age half-yearly grouping, the boys were placed in the year which they were in; e.g., a boy fourteen years seven months would be placed with the fifteen-year group. A boy fourteen years one month would be placed in the 14.6-year group.

TABLE 2.
JUNIOR SCHOOL BOYS.

Chronological Age	Physiological Age							
	P ₁		P ₂		P ₃			
	Total	Per Ct.	Total	Per Ct.	Total	Per Ct.	Total	Per Ct.
10.0.....	2	2.2					2	2.2
10.6.....	9	10.					9	10.
11.0.....	10	11.11					10	11.11
11.6.....	13	14.4					13	14.4
12.0.....	11	12.2					11	12.2
12.6.....	12	13.3					12	13.3
13.0.....	11	12.2					11	12.2
13.6.....	7	7.7	1	1.06			8	8.51
14.0.....	9	10.	1	1.06			10	11.11
14.6.....	4	4.24	1	1.06			5	5.31
15.0.....	2	2.2	1	1.06			3	3.19
Total.....	90		4				94	
Percentage.....	95.7		4.24				100	

Physiological and Chronological Distribution of Junior School Boys' Class.

TABLE 3.
JUNIOR BUSINESS BOYS.

Chronological Age	Physiological Age							
	P ₁		P ₂		P ₃			
	Total	Per Ct.	Total	Per Ct.	Total	Per Ct.	Total	Per Ct.
11.0.....	1	2.85					1	2.85
11.6.....	1	2.85					1	2.85
12.0.....	3	8.57					3	8.57
12.6.....	3	8.57					3	8.57
13.0.....	5	14.28					5	14.28
13.6.....	5	14.28	1	2.85			6	17.14
14.0.....	2	5.71	2	5.71			4	11.42
14.6.....	3	8.57					3	8.57
15.0.....	2	5.71	3	8.57			5	14.28
15.6.....	2	5.71					2	5.71
16.0.....	1	2.85	1	2.85			2	5.71
Total.....	28		7				35	
Percentage.....	80		20				100	

Physiological and Chronological Distribution of Junior Business Boys' Class.

TABLE 4.
SENIOR SCHOOL BOYS.

OBSERVATIONS

Chronological Age	Physiological Age							
	P ₁		P ₂		P ₃			
	Total	Per Ct.	Total	Per Ct.	Total	Per Ct.	Total	Per Ct.
13.6.....			3	5.63	3	5.63	6	11.32
14.0.....			3	5.63	3	5.63	6	11.32
14.6.....			3	5.63	2	3.77	5	9.43
15.0.....			3	5.63	4	7.54	7	13.2
15.6.....	2	3.77	3	5.63	8	15.09	13	24.52
16.0.....	1	1.88	2	3.77			3	5.63
16.6.....			1	1.88	5	9.43	6	11.32
17.0.....			1	1.88	4	7.54	5	9.43
17.6.....					2	3.77	2	3.77
Totals.....	3	5.63	19	35.84	31	58.49	53	100.

Physiological and Chronological Distribution of Senior School Boys' Class.

TABLE 5.
SENIOR BUSINESS BOYS.

OBSERVATIONS

Chronological Age	Physiological Age							
	P ₁		P ₂		P ₃			
	Total	Per Ct.	Total	Per Ct.	Total	Per Ct.	Total	Per Ct.
14.0.....					1	3.22	1	3.22
14.6.....								
15.0.....					1	3.22	1	3.22
15.6.....			3	9.67	3	9.67	6	19.35
16.0.....			2	6.45	6	19.35	8	25.8
16.6.....			2	6.45	3	9.67	5	16.12
17.0.....	1	3.22			3	9.67	4	12.9
17.6.....			1	3.22	2	6.45	3	9.67
18.0.....				3.	3	9.67	3	9.67
Totals.....	1		8		22		31	
Percentage	3.22		25.8		70.96		100	

Physiological and Chronological Distribution of Senior Business Boys' Class.

The following graphs compare the three pubertal periods of the school boys with the business boys.

COMPARISON OF PUBERTY SCHOOL BOYS AND BUSINESS BOYS.

 P_1

	10	10.6	11	11.6	12	12.6	13	13.6	14	14.6	15	15.6	16	16.6	17	17.6
Junior School.....	2	9	10	13	11	12	11	7	9	4	2	2	1	..	..	..
Junior Business.....	..	..	1	1	3	3	5	5	2	3	2	2	1	..	1	..

 P_2

	10	10.6	11	11.6	12	12.6	13	13.6	14	14.6	15	15.6	16	16.6	17	17.6
School.....	4	4	4	4	3	2	1	1	..	..
Business.....	1	2	..	3	3	3	2	..	1

 P_3

	13.6	14.0	14.6	15.0	15.6	16.0	16.6	17.0	17.6	18.0
School.....	6	6	5	7	13	3	6	5	2	..
Business.....	..	1	..	1	6	8	5	4	3	3

In the P_1 school group the height of the frequency curve is reached at 11.6 years. The business boys' P_1 frequency curve height is reached at 13.0 to 13.6 years. The P_2 group shows the same tendency. In the case of the school boys, the height is at 13.6 and continues to 15.0 years. The business boys' greatest frequency commences at 15.0 and continues evenly for a full year. Again, the same condition is evident in the P_3 group. Fifteen years and six months is the height of the frequency curve for school boys. The frequency curve for business boys reaches its height at sixteen years. Although the amount of data is extremely limited it apparently demonstrates that the business boys' pubertal period is delayed.

The system of grading has been in use for one gymnasium year (nine months). Its efficiency has far exceeded my expectations and I shall continue its use. It was possible to grade the work for the classes far more effectively than by the old method of chronological grading. Moreover, I am sure the individuals of each class were benefited more than 100 per cent through the efficiency of this work. At the present time the class work closely follows Dr. Crampton's system of physical training as outlined in the AMERICAN PHYSICAL EDUCATION REVIEW, October, 1911, pp. 431-438.

The foregoing is easily possible of adoption by any Y. M. C. A. physical department. It would likely cause various complications if used by any department of education, but there are no situations too serious to warrant the rejection of this classification. It is one step nearer to perfect efficiency. When this is in vogue, no longer does the gymnasium class loom up as a nightmare for the awkward boy, for by no means is he alone.

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- Am. Jr. Diseases Children.**—American Journal of Diseases of Children. \$3.00. (M). 535 Dearborn Ave., Chicago.
- Boston Med. and Surg. Jr.**—Boston Medical and Surgical Journal. \$5.00. (W). 101 Tremont St., Boston.
- Fort Rev.**—Fortnightly Review. \$4.50. (M). Leonard Scott Pub. Co., 249 West 13th St., New York.
- Jr. Infect. Dis.**—Journal of Infectious Diseases. \$5.00. (Irreg.) 1743 W. Harrison St., Chicago.
- Med. Rec.**—Medical Record. \$2.00. (M). Medical Review of Reviews, 12 Mt. Morris Park, W., New York.
- Swim. Mag.**—The Swimming Magazine. 5s. (M). 8 Bayley St., Bedford Sq., London, W. C.
- U. S. Naval Medical Bulletin.** Gratis. (Q). Gov't Printing Office, Washington, D. C.

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*For additional publishers see REVIEW, pp. 477, 591. June and November, 1914.

NEWS NOTES.

Members should notify the secretary immediately of any change of address.

NEW MEMBERS ADMITTED BY VOTE OF THE EXECUTIVE COMMITTEE, JANUARY, 1915.

- Henrietta E. Adams, 1620 13th Ave., Seattle, Wash.
Franklin I. Armstrong, Michigan State Normal College, Ypsilanti, Mich.
Nettie Lucile Blake, Sanitarium H. P. O., Battle Creek, Mich.
C. Perry Blakeslee, 55 Howland St., Battle Creek, Mich.
Florence G. Bissett, 3 Prospect St., New Rochelle, New York, N. Y.
C. S. Botsford, Reed College, Portland, Ore.
Evelyn M. Butler, 230 West 104th St., New York, N. Y.
Walter Campbell, International Y. M. C. A. College, Springfield, Mass.
Sara Charlton, 120 East Henry St., Savannah, Ga.
Fred H. Clapp, International Y. M. C. A. College, Springfield, Mass.
Katherine L. Cronin, P. O. Box 126, Albion, Idaho.
Dan M. Davis, Michigan State Normal College, Ypsilanti, Mich.
Mary M. Dever, 404 West 115th St., New York, N. Y.
Gladys Eylich, 511 Amite St., Jackson, Miss.
Jennie Y. Fleming, 494 Arrowhead Ave., San Bernardino, Cal.
Glenn H. Fraser, Michigan State Normal College, Ypsilanti, Mich.
Arthur H. Froehlich, 2836 Franklin Ave., Cleveland, Ohio.
Frieda Goldsmith, 161 11th Ave., East, Eugene, Ore.
Nannie Henderson, Normal School of Physical Education, Battle Creek, Mich.
Doris A. Hussey, Wheaton College, Norton, Mass.
Helen Jones, 1320 Amsterdam Ave., New York, N. Y.
Mae D. Jones, Sanitarium H. P. O., Battle Creek, Mich.
James A. Kase, Indiana University, Bloomington, Ind.
Elliott G. Kingsbury, City Hall, Yonkers, N. Y.
Clair Langton, 302 Forest Ave., Ypsilanti, Mich.
D. S. Leland, Michigan State Normal College, Ypsilanti, Mich.
Grace Mildred Lincoln, 24 Shepard St., Cambridge, Mass.
Ethel May Manchester, 477 University Ave., Rochester, N. Y.
Mrs. Salome Marckwardt, Ann Arbor, Mich.
Mrs. C. H. Mattison, 329 South Crouse Ave., Syracuse, N. Y.
George M. Mead, 423 Hamilton St., Ypsilanti, Mich.
John F. Miller, 119 Massachusettus Ave., Springfield, Mass.

- Zena Morrell, 74 Rovine St., Battle Creek, Mich.
Mary C. Murray, 395 Newport Ave., Wollaston, Mass.
Ethel Nelson, 307 Champion St., Battle Creek, Mich.
Wanda E. Neusum, Normal School of Physical Education, Battle Creek, Mich.
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Edna von Pein, Normal School Physical Education, Battle Creek, Mich.
Marion O. Perkins, 232 West Johnson St., Germantown, Pa.
Olga C. Pressentin, Normal School Physical Education, Battle Creek, Mich.
Lucy Neunham Retting, Triangle Terrace, Ypsilanti, Mich.
Alma L. Sevan, 284 Champion St., Battle Creek, Mich.
Carl H. Smith, Tome School, Port Deposit, Md.
Martin W. Souders, 119 Massachusetts Ave., Springfield, Mass.
Ivalclare Sprow, Sanitarium H. P. O., Battle Creek, Mich.
J. K. Staples, High School, Houston, Tex.
William D. Thornton, 2210 East 86th St., Cleveland, Ohio.
Ralph O. von Thurn, 114 Normal St., Ypsilanti, Mich.
Harold W. S. Van Arsdale, International Y. M. C. A. College, Springfield, Mass.
Edna Wellman, Normal School of Physical Education, Battle Creek, Mich.
Laura M. West, 2358 Washington St., Newton Lower Falls, Mass.
Helen E. Whiting, Y. W. C. A., Aurora, Ill.
John K. Wolfe, 157 Fargo Ave., Buffalo, N. Y.
Jane Woodelton, Y. W. C. A., Williamsport, Pa.
Crystal Worner, Michigan State Normal College, Ypsilanti, Mich.

By vote of the executive committee the Rochester, N. Y., Local Society has become affiliated with the National Association.

MONTESSORI AND THE KINDERGARTEN.

Miss Elizabeth Harrison, of the National Kindergarten College, Chicago, Ill., was a member of the class in Montessori work under Madam Montessori's direct instruction, held in Rome last year. At the request of this bureau she has prepared a careful analysis of Dr. Montessori's work, with special reference to the kindergarten. She sums up as follows:

Physically—Dr. Montessori has organized definite gymnastics for the muscular development of the child, basing the same on their relationship to the nervous system, but so far has introduced no dramatic play.

Froebel would have all bodily exercise done under the stimulus of play, leaving the definite muscular development to the body's response to the demand of the dramatic instinct of the child. The two methods can easily be united to the betterment of the child.

Psychologically—Although Dr. Montessori claims that the unfolding of the child's inner life should be the chief aim of education, she frankly confesses that she knows no other way to deal with this spiritual life than definitely to train the senses. She says, "The content of our mind is made up of what we take materially from our surroundings by means of sensation." Therefore she emphasizes sense-impressions but ignores the processes of apperception, memory and imagination by means of which the mind itself makes use of these sense-impressions for its own development. She leaves these important activities of the Ego undirected and uncorrected by the teacher, although often directed and interfered with by the other children.

Froebel, in all his writings, insists also upon the importance of clear sense-impression, but he then shows how each new sense-impression should be correlated, by the mind, with the knowledge already acquired, else the growth of the mind will be confused and hampered by unorganized impressions. He thus emphasizes the energies of the mind as inborn, acting upon the material brought it by means of the senses rather than as something built up from the outside world through sense-impressions.

Pedagogically—Dr. Montessori confines her "didactic material" to geometric impressions and utilitarian purposes.

THE SEWICKLEY, PA., PLAN.

One of the experiments attracting the attention of school men is that at Sewickley, Pa., a town of about 5000 population. The superintendent of the Sewickley schools, after a visit to the schools at Gary, Ind., was convinced that while he could not adopt all that he had seen at Gary, he could make use of the Gary idea of giving more time to play and industrial work.

At that time there was no supervised play or industrial work in the Sewickley schools. The problem of introducing these without adding materially to the cost of instruction was solved whereby a program was arranged in accordance with the Gary principles.

The regular classroom teachers were kept occupied while the pupils were in the manual training shops, domestic science

kitchen, or on the playground, and while the pupils were receiving instruction in music or drawing.

The departmental plan is in effect in the grades; there are special teachers for music and drawing, language and literature, grammar and composition, physical training, history and civics, manual training and domestic science.

The following is an outline of the general program which permits half the children to be under the regular classroom instructors and the other half under the special teachers, there being eight teachers for regular classroom work and nine for the special subjects previously enumerated:

GRADE	Room	180 Min. A. M.		150 Min. P. M.					
		90 Min. A. M.	90 Min. A. M.	75 Min. P. M.	75 Min. P. M.				
First.....	1	1B	1A	1B	1A				
Second.....	2	2B	2A	2B	2A				
Third.....	3	3B	3A	3B	3A				
Fourth.....	4	4B	4A	4B	4A				
Fifth.....	5	5B	5A	5B	5A				
Sixth.....	6	6B	6A	6B	6A				
Seventh.....	7	7B	7A	7B	7A				
Eighth.....	8	8B	8A	8B	8A				
Special Subjects		45 M.	45 M.	45 M.	45 M.	37 M.	37 M.	37 M.	37 M.
Music and Drawing.....	9	1A	2A	1B	2B	3A	4A	3B	4B
Language and Literature.....	10	3A	4A	3B	4B	1A	2A	1B	2B
History and Civics.....	11 or 12	5A	7A	8B	7B	6A	5A	6B	5B
Grammar.....	12 or 11	7A	8A	7B	8B	5A	6A	5B	6B
Music and Drawing.....	13	5A	6A	5B	6B	7A	8A	7B	8B
Dom. Sci. and Man. Tr.....	14 and 15	6A	5A	6B	5B	8A	7A	8B	7B
Physical Training (.....)	Play-	2A	1A	2B	1B	4A	3A	4B	3B
Physical Training (.....)	Room	2A	3A	4B	3B	2A	1A	2B	1B

A study of this program shows that while the B division of a grade is in regular classroom during the first ninety-minute period, the A division is having work with the special teachers. The program is reversed for the second ninety-minute period. The following program for the sixth grade illustrates the plan in detail:

PROGRAM.

Grade 6—Year 6.

First 90 minutes: 8.45-10.15 a.m.

6B—Room 6.

8.45 - 8.55	Opening exercises	10 min.
8.55 - 9.10	Spelling	15 min.
9.10 - 9.50	Arithmetic	40 min.
9.50 - 10.15	Geography	25 min.

6A.	8.45 - 9.30*	Domestic Science, Manual Training, Monday, Wednesday, or Physical Training, Tuesday, Thursday, Friday.
	9.30 - 10.15	Music and Drawing, Tuesday, Thursday, Friday, Room 13.
Second 90 minutes: 10.15-11.45 a.m.		
6A—Room 6.	10.15 - 11.45	Spelling, Arithmetic, Geography, as for 6B.
6B.	10.15 - 11.00*	Domestic Science, Manual Training, Monday, Wednesday, or Physical Training, Tuesday, Thursday, Friday.
	11.00 - 11.45	Music and Drawing, Tuesday, Thursday, Friday, Room 13.
First 75 minutes: 1.00-2.15 p.m.		
6B—Room 6.	1.00 - 1.35	Reading 35 min.
	1.35 - 1.55	Writing 20 min.
	1.55 - 2.15	Physiology 20 min.
6A.	1.00 - 1.37½	History and Civics, Room 11.
	1.37½- 2.15	Grammar and Composition, Room 11.
Second 75 minutes: 2.15-3.30 p.m.		
6A—Room 6.	2.15 - 3.30	Reading, Writing, Physiology, as for 6B.
6B.	2.15 - 2.52½	History and Civics, Room 11.
	2.52½- 3.30	Grammar and Composition, Room 11.

By organizing the Sewickley schools on this plan, the children in the first four grades have 412 minutes a week for play under the direction of a special playground instructor, the fifth and sixth grades 135 minutes, and the seventh and eighth 112 minutes. The superintendent says: "This plan has been in operation two years and has proved successful from an educational and a financial point of view. The old plan, with the present additions to the program of work, would require a longer day and would be more expensive."

THE RECREATIONAL ASPECTS OF A SCHOOL SYSTEM IN A MIDDLE-SIZED CITY.

Springfield, Ill., has "taken account of stock." Its Survey committee secured the assistance of the Russell Sage Foundation in making the investigation and preparing reports on its schools, recreations, charities, industrial conditions, city and county administration, public health, correctional system, care of mental defectives, and housing conditions.

* Domestic Science and Manual Training periods are double periods, 90 minutes, from 8.45 to 10.15 for 6A, and from 10.15 to 11.45 for 6B.

The report of the Recreation Survey section has just been issued in pamphlet form. Lee F. Hanmer and Clarence Arthur Perry are the joint authors. Teachers, principals, superintendents and members of school boards will be interested in their findings and recommendations, which touch upon the school system of that flourishing middle western city of 59,000 population.

The school yards of Springfield average $2\frac{1}{3}$ acres each. In a city which had been so generous in providing play spaces, it would be expected that a rich and varied play life would be exhibited. The investigators found, however, that "the only activities reported by over 20 per cent of the boys were baseball, motion picture shows, reading and kite flying, while the old standard games that American boys have been brought up on, such as prisoners' base, leapfrog, blindman's buff, bull in the ring, hare and hound and duck on the rock are reported as played by less than half of one per cent of the grammar school boys. Most of these standard games were mentioned by only one-tenth of one per cent, or about one boy in 1000.

"In the case of the girls, motion picture shows, jumping the rope, roller skating and hide and seek are the four most popular means of recreation. The standard games which should bring girls together in safe, happy, coöperative play, such as I spy, London Bridge, fox and geese, button button and blindman's buff, are at the bottom of the list, indicating that they are played by comparatively few girls."

The Springfield school buildings were used for recreational evening occasions only every nine or ten weeks during the school year; so it is not strange that in a city of less than 60,000 inhabitants about \$6000 a week was being spent upon theaters and motion pictures. No dancing was allowed in the public schools, but a great deal was going on in the public halls without responsible supervision. In the high school, the same negligence of the social and recreational needs of youth was exhibited, with the result that many of the student activities were being carried on outside of the school and were not under the control of either parents or teachers.

An inquiry into the amusements of the high school students showed that "practically all of the high school students attend the movies. Of the boys, 86 per cent, and of the girls, 84 per cent, attend the theater. The boys who attend average about once a week and the girls go almost as frequently. The majority of the visits to the theater are not made, in the case of either sex, with any other member of the family. Social dancing is indulged in by 40 per cent of the boys and 48 per cent of the girls. A large number of the dances they attend are held in hotels. In 61 per cent of the boys' homes and in 48 per cent of the girls' homes parties for young people are not often held."

The report gives a detailed recreational program and among other things advocates the establishment of a department of physical training and play (a recommendation which is now being carried out), the purchase of a public schools' athletic field, coöperation between the board of education and the park board in the utilization of park playgrounds, and a system of school social centers to be carried on under the direction of the superintendent of schools and principals, and partially maintained by parent-teacher associations. Model layouts for two types of school yards are shown by colored plates.

BOOK REVIEWS.

THE MODERN HIGH SCHOOL. By *Charles H. Johnston, Ph. D.*, and others. *Charles Scribner's Sons*, 1914. 847 pp. Price \$1.75.

The viewpoint of this book is social education in its broadest sense. The following quotation from the preface gives an idea of the general scope of the book. "This book contains those accounts and expert indorsements of high school movements which are illustrating for us the only kind of social education which as yet can have a definite meaning. The cumulative results of these accounts and definite points of view furnish data for a respectable social philosophy of education. The field covered is simply that indicated by the title of the volumes: i.e., a survey of policies, examples and suggestions of ways and means of making *the strictly socializing work of our actual high schools* more definite, more effective and more nearly universal.

"A former volume ('High School Education') was concerned primarily with the problems of classroom instruction in the different high school subjects and with certain technical matters of administration closely related to these problems. A third volume is under way which is to deal strictly and systematically with the clearly distinct problems of high school supervision (especially of class teaching). It is hoped that this present second volume may make definite contributions and prove stimulating to the movement for promoting the efficiency of *social* administration as distinguished from merely mechanical administration of our high schools."

The book has a splendid bibliography for each chapter. Part I discusses the institutional relationships of the high school, taking up the high school education as a social enterprise; the legal status of the high school; the high school as a business enterprise; the relationship of the high school to the elementary school, to higher educational institutions and to industrial life. Part II discusses the more intimate specialized relationships of high school work, as for example, the socialized high school curriculums and courses of study; the details of class management in relation to the family, the outside community and home associations. Part III discusses definite internal expressions of the social nature and socializing function of the high school. The chief problems discussed are the internal government as an expression of the social character of the high school; the improvement of high school teachers in service; the administration of the social activities; the control of high school athletics, debating societies, journalism and fraternities. Part IV discusses the high school as a social center; it contains the problems and continuation work of vocational guidance and the problems of hygiene morality which center around the high school.

The book is a mine of information for high school teachers who desire to get a broad viewpoint of the problems of the high school.

THE BOOK OF ATHLETICS. By *Paul Withington, M. D. Lothrop*, *Lee & Shepard Co.*, 1914. 512 pp. Price \$1.50.

The following statement from the preface gives the general plan of the book. "The Book of Athletics' is a collection of articles written by players, captains, coaches and trainers of many college teams, and by others who have had a wide experience in athletics. While it makes no pretense of containing exhaustive treatises on all branches of sports, or even of being a complete and sufficient text-book on those sports con-

sidered, it has been the endeavor of the editor in gathering material to cover in an interesting and instructive way the games commonly played in school and college circles. The book is designed to give those interested a certain amount of knowledge and insight into the player's side of athletics. It is intended that the discussions shall not be so technical as to be unintelligible to beginners, nor so elementary as to fail to interest the expert.

"The greatest space and endeavor have been given to what are known in college ranks as the major sports. Accordingly, much more space has been allotted to football, on which there are articles, not only on the game in general, but on each position and on the important features of the game."

Leading college athletes and trainers have coöperated with Doctor Withington in the compilation of this book. Doctor Withington's position at Harvard has given him a fine opportunity as editor. His position in swimming, football, rowing and wrestling at Harvard have given him a wide outlook. The articles by Murphy, Fitzpatrick and Yost will add to its value for many men. This book is an improvement over the Book of Athletics prepared by Bingham in 1895. It is the best general work on sport published in the United States.

PHYSICAL TRAINING FOR THE CITY SCHOOLS OF MICHIGAN.
Prepared by Executive Committee, Physical Training Section, State Teachers' Association. Published by the State Superintendent of Public Instruction, 1914. 251 pp.

This book, edited by the executive committee of the physical training section of the State Teachers' Association of Michigan, is a mine of information and suggestion for teachers of physical education in public schools. The members of the committee: W. P. Bowen, C. F. Tambling, Ethel Perrin, Ethel Rockwell, Fannie C. Burton and W. W. Hastings have done a splendid piece of work. The introduction of the book gives the opinions of prominent psychologists regarding the educative value of physical training. Quotations are given from such men as G. Stanley Hall, E. A. Kirkpatrick, John Dewey and Edward L. Thorndike. Short paragraphs are given on the hygienic and recreative value of physical training, the scientific management of the machine, sex hygiene, physical examination, health instruction, recreation and corrective gymnastics. The pictures of good and poor posture will aid both teacher and pupil. In the first and second grades the lessons are made up of story plays, rhythmic plays and miscellaneous plays and games; these are arranged in half-year periods. With the beginning of the third year the formal gymnastic lessons begin, but the same plan of having the rhythmic plays and miscellaneous plays and games is included in each grade. Beginning with the eighth grade the boys substitute athletics for a part of the gymnastic work, while the girls have folk dancing. The ninth and tenth grades separate the physical training for girls from the physical training for boys. A section is devoted to group competition with the methods and scoring tables appended. The book should be of great help to teachers of physical education.

FOOTBALL, FOR PLAYERS AND COACHES. By *Glenn S. Warner*.
Published by author, 1912. 141 pp. Price \$2.50.

Glenn Warner's "Football for Players and Coaches" fills a real need. It gives many definite suggestions telling what to do and how to do it. It is well illustrated with diagrams of plays and half-tone cuts. The table of contents which follows gives a good idea of the contents of the book. Football coaches will receive many good suggestions from it.

Table of contents: How Players Should be Outfitted; How to Train and How to Treat and Protect Injuries; How to Make and Use Tackling Apparatus and Charging Sleds; Tackling; Falling on the Ball; Blocking and Interfering; Punting; Forward Passing; Judging and Catching Punts; Place Kicking; Goal Kicking after Touchdown; Kick Off; Drop Kicking; How to Play End; How to Play Tackle; How to Play Center; How to Play Quarterback; How to Play Halfback and Fullback; Football Practice; System of Signals; Generalship; Offense; Defense.

A TEXT BOOK OF HISTOLOGY. By *Dr. Frederick T. Lewis*, Assistant Professor of Embryology at the Harvard Medical School and *Dr. Philipp Stöhr*, formerly Professor of Anatomy at the University of Würzburg. Second edition with 495 illustrations. *P. Blakiston's Sons & Co.*, Philadelphia, 1914. 534 pp. Price \$3.

This is the best and most complete text-book of histology which the writer has seen. The material is presented from the embryological point of view. The work represents the seventh American edition of Stöhr's Histology from the fifteenth German edition edited by Dr. O. Schultze. The characteristics of this edition are its clear and concise style, the absence of borrowed illustrations and full directions for preparation of every specimen illustrated. Stöhr possessed unusual artistic talent and many of the illustrations were drawn by himself. The text is richly and well illustrated.

The description of the development of each organ as an introduction to the study of its microscopic structure is interesting, logical and pedagogic. It proceeds from simple to complex and emphasizes fundamental rather than secondary features.

A large number of references to original papers, ancient and modern, are inserted. Historical presentations frequently give the student a glimpse of the development of the science, and the wealth of modern references brings one into touch with the important work now being done by anatomists.

A valuable addition is found in a chapter on microscopic technique by Mr. L. G. Lowrey, instructor in the subject at the Harvard Medical School. The work will be found somewhat technical to one not well up in histological work, but is a mine of information.—*E. B.*

MANUAL OF PHYSICAL TRAINING. Two new Handbooks of Physical Training for the Cincinnati Public Schools by *Dr. Carl Ziegler*, Director of Physical Education and Hygiene of that city. 168 pp. 6 x 9 inches. Price: one volume \$.60, both \$1.

One hundred different lessons with five hundred small line engravings, illustrating the correct execution of exercises, are contained in the two volumes. The lessons cover the whole year's work for the eight school grades and include free exercises without and with hand apparatus such as dumb-bells and wands, the description of the most practical games for the schoolroom and yard, and a list of appropriate folk dances. Twenty-four pages are devoted to detailed explanations, which together with the illustrations will be a great help to the class teachers and avoid misinterpretation of the exercises.

I believe that this manual will be of value to every physical director, for it is the result of the life's experience of some of the leading men in our profession.—*Adolph Picker.*

THE OCCUPATIONAL DISEASES, THEIR CAUSATION, SYMPTOMS, TREATMENT AND PREVENTION. By *W. Gilman Thompson, M. D.* D. Appleton & Co., 1914. 724 pp. \$6.

The author of this book states in his preface that the book "is designed primarily for physicians interested in the subject of the Occupational Diseases of Modern Life, and also as a guide for students of social economics—social service workers, insurance actuaries and those whose special interests deal with problems of labor legislation, or with workers in the chemical, textile and many other manufactures or trades in which the health of the workman is closely related to problems of efficiency and humanitarian effort." The book will, for American readers, take the place of Oliver's "Diseases of Occupation," because it is more closely related to American conditions than the English book. The book will be of particular value to American teachers of hygiene who teach environmental hygiene and to those who give vocational advice to young people from the health standpoint. Increasingly the director of physical education is a confidential adviser to young people. Advice concerning life callings will be given more intelligently by the careful study of this book. Aside from the careful presentation of the facts regarding occupational diseases the book contains valuable sections on general remedial measurements related to personal hygiene. The small section on exercise is made up of general platitudes. The section on ventilation is a strange jumble of the old and new in ventilation. No clean-cut differentiation is made between the effects of temperature, humidity, dust, bacteria and CO₂ influence on the individual. The discussion of ventilation on pages 98-101 is an illustration of generalization without scientific discrimination. The author's discussion on page 99 of stale and fresh air in relation to blood-pressure is a concrete example. No one questions the improvement of the patient in changing from the closed room to out of doors. The author *assumes* that the improvement is due to the change from stale to fresh air. He fails to consider the tonic effects of air movement, changed temperature and humidity.

CASPAR'S TECHNICAL DICTIONARY, ENGLISH-GERMAN AND GERMAN-ENGLISH, COMPRISING THE MOST IMPORTANT WORDS AND TERMS IN TECHNOLOGY, ENGINEERING, MACHINERY, CHEMISTRY, NAVIGATION, SHIPBUILDING, ELECTRO-TECHNICS, AVIATION, etc., etc. By *C. N. Caspar.* C. N. Caspar Company, Milwaukee, Wis., 1914. 272 pp. \$1.

This pocket technical dictionary will be of help to students pursuing technical studies. The apparent advantage of this book is its small size and space-saving typographical arrangement. Some 50,000 words are included and still the book is of handy pocket size.

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JAMES HUFF McCURDY, M. D., Editor

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THE AMERICAN PHYSICAL EDUCATION ASSOCIATION

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AMERICAN PHYSICAL EDUCATION REVIEW

JAMES HUFF MCCURDY, M. D., *Editor*

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MARCH, 1915

Whole No. 112

REPORT OF THE ANNUAL MEETING OF THE SOCIETY OF DIRECTORS OF PHYSICAL EDUCATION IN COLLEGES.

The eighteenth annual meeting of the Society of Directors of Physical Education in Colleges was held at the Quadrangle Club, at Chicago University, on December 30, 1914.

COUNCIL MEETING 9.45.

Present: Vice President Savage and the secretary.

Voted to recommend for membership in the Society: George A. Huff, University of Illinois; Samuel Clyde Williams, University of Iowa; John W. Wilce, Ohio State University.

MORNING SESSION 10.50.

Present: McCurdy, von den Steinen, Lambeth, Reed, McComber, Meylan, Edgar Fauver, Edwin Fauver, Babbitt, Elsom, Meanwell, Storey, Samson, Reiter, Cooke, McKenzie, Hetherington, Hicks, Raycroft, Ehler, Savage, Sargent, St. John, Phillips. Visitors: F. W. Dixon, Wm. Burdick, T. H. Ransom, Frank Haggerty, D. L. Huffer, R. N. Fargo, J. P. Sprague, L. G. Pates, J. H. Nichols, H. L. Gill, H. F. Kallenberg, S. C. Williams, W. J. Monilaw, J. L. Griffith, W. T. Harmon, Lewis Omer, H. C. Page, W. P. Bowen, J. W. Page, P. A. L. Ball.

Prof. C. L. Brewer presented "Intercollegiate Athletics as a part of the work of Physical Training in the Colleges of the Southwest." (Page 12.) He gave as the territory covered Kansas, Missouri, Arkansas, Texas and Oklahoma. The main problem was to educate the public to believe the work has a place in an educational scheme. He showed that as the colleges in this territory could build from the ground they were able to avoid many of the mistakes of the colleges of the North and West.

These were largely lack of organization and correlation in the departments of these colleges, and especially the failure to bring the athletics of the college under the department of physical education. They had tried to overcome these defects among the colleges of the South and West. They aim to make the director of physical education director in fact of all activities of a physical nature. A very radical departure at the University of Missouri is that no specific amount of work is required. The work is based on the physical and medical examination. He may elect any work not prevented by these, but must work as long, one, two or three or more years, or none, as the department thinks wise. Positive academic credit is given for the work in physical education. The minimum of work for credit is three hours a week, and a "checker" is used to insure the work being done. All the work in physical education is done between 4 and 6 p.m. These hours are set aside by the University for this as "recreation period." A normal course in connection with the school of education is given also, consisting of twenty-four hours' theory and some practice. Much extension work is also done by the department throughout the state among high schools.

Dr. James A. Babbitt presented a paper on "Progressive Correlation in Gymnasium Work." (Page 125.) It was a description of the plan recently worked out at Haverford College. After stating that the director should steer a middle course between rashness and conservatism he gave ten fundamental demands of such a program. These included: dignity, comparable with other departments; the principle of progression; possibility of subdivision and grading; high standards; provision for invalids, recognition by students; chance for individuality; definiteness; automatic disciplinary conditions and a duration of progressive work worth the term "epoch." The satisfying of these demands he termed a "qualification goal." The plan differed from any at present in use in excusing students from required class-work when they had passed a qualification test of 80 per cent in the following: upper body control, lower body control, strength of arms, strength of chest and shoulders, swimming, control of abdominal muscles, strength of back, coördination, endurance, agility and elasticity. The course consisted of three hours a week, including one lecture in theory every other week. The theory consisted in freshman year of anatomy of principal muscles and their application, physiology of exercise, gymnastic day's order and effects of training; in sophomore year of anatomy and physiology of nerves, relations of physical exercise to alimentation, special neuro-muscular effects, practical application of exercise and relation to individual exercise. The marking system and topical outlines were also exhibited to the Society. An interesting discussion followed.

Dr. Dudley A. Sargent read a paper entitled, "Is War a

Biological Necessity?" (Page 135.) After a statement of the biological laws which underlie the cell life and growth and the conditions necessary for their proper development he traced the growth of the individual and the races of the world under the same laws and came to the conclusion that it was in physical exercise and the contests of the athletic field that we could get proper development to-day. His answer was that war is not in this age a biological necessity.

Dr. Paul C. Phillips, in a paper on "Relation of Athletic Sports to International Peace" (page 143), assumed that international peace was possible and desirable. He showed that while national sports were useful in fitting nations for war and had been so used, their prevalence did not necessarily make peoples combative. He attached a certain value to the hygienic effects of athletic sports in making for peace because of the saner state of mind produced and a slight value to the Olympic sports in bringing about international peace by the associations of athletes and others and the understanding of national sentiments, aspirations and viewpoints. The principal line of argument was that as athletic sports are the natural means for the development of the fighting instinct which is so prominent a factor in war, the proper education of individuals, especially young men, during the play and sport periods of life would tend not to promote fighting in itself but a higher ideal of sportsmanship: that this education could be carried right on into the mature years of the individual and would operate in the group and eventually the nation, giving a *national sportsmanship*. The development of a willingness to submit disputed points to a referee was mentioned as favoring submission of national questions to international conciliation.

No detailed program of methods was given, but the opinion expressed that it should be worked out by psychologists and educators and persisted in for generations.

Discussion on the last two papers was brief, as the time for lunch had arrived.

Lunch was served to about forty-five at the Quadrangle Club, after which a visit was made to the University gymnasium and the new cement grandstand.

AFTERNOON SESSION 2.30.

The afternoon session started at 2.30, with some forty in attendance.

"The Effect of Athletic Training on the Heart" (page 148) was the title of a paper presented by Dr. W. S. Middleton, of the department of clinical medicine of the University of Wisconsin. The paper was the report of an extended investigation that he, sometimes in collaboration with Doctor Shumacker, has been

making on the athletes of the University. The athletes in the more vigorous and exhausting sports received most attention. After noting the points on which most physiologists agree regarding the effects of prolonged, severe muscular strain on arterial and venous pressure and pulse rate he discussed the changes in form. The variation in the findings of various observers, he thought largely due to the different methods used. He inclined to the view that the heart did become larger during violent effort. Attention was called to the liability to acute dilation at these times because of the depression of myocardial tonicity. Cases were cited showing such results. He discussed the question whether there is ever a normal cardiac hypertrophy, rather favoring the view that there is not. Authorities were quoted and observations cited to show that a hypertrophied heart is more susceptible to fatty degeneration, etc. In a group of forty-six university athletes, Shumacker and Middleton found the following well-defined groups: (1) three with normal hearts; (2) ten with dilated and hypertrophied hearts, good compensation, the "big athletes" group; (3) twelve with dilated and hypertrophied hearts and marked reaction to slight exertion, these were athletes generally who had many training periods; (4) twelve with dilated and hypertrophied hearts and murmurs before and after exercise; (5) two with hearts convalescing from acute dilation; (6) athletes showing several lesions after ceasing athletic training.

Doctor Middleton showed a table indicating the frequency of cardiac hypertrophy and functional disturbances in athletes training for various sports. The greatest frequency was in football, running (over 440 yards) and crew (81 per cent).

Conclusions.

1. Cardiac hypertrophy the usual result of training in endurance events.
2. Dilatation occurs much more frequently in athletes than non-athletes (especially crew men and distance runners).
3. Significance of hypertrophy still unsolved, while it may increase power it lowers heart resistance.
4. There seems good evidence that the "athletic heart" has lessened resistance to infectious diseases, hence care should be taken against putting a strain on the heart in case of even mild infectious diseases, as colds.

Discussion. Doctor Meylan regretted that the study had not been carried far enough to give the results on the athletes. He agreed with Doctor Middleton that physiologists as yet were quite at sea regarding the significance of cardiac hypertrophy, some saying that no cardiac hypertrophy was physiologic, others disagreeing. He referred to the findings in his study of Harvard

oarsmen: only two cases of cardiac hypertrophy in seventy-six men examined ten to forty years after. Test of oarsmen in past more violent than now. He cited two instances of oarsmen, Plaisted (sixty-eight) and Duncan (forty-four), who after forty and twenty-five years of most vigorous exercise (rowing) were fine specimens physiologically with no hypertrophy.

Doctor Meylan thinks 25 per cent of college men can safely go into vigorous competitive sports and if there is a slight risk (which he does not grant) the gain overvalues it. He quoted Doctor Cabot, "I doubt whether a sound heart can be broken down by hard work alone."

Doctor McKenzie said that Doctor Middleton showed clearly that disturbances to heart and circulation are in direct proportion to the exertion. He was surprised that basket ball was placed so low in the scale of violence, but that it must be so. He thought that the bad showing in some sports was due to the position of the athlete in the event. He brought out that our experience showed that it must be difficult to injure hearts or we should have more fatalities. He said that the heart must be hypertrophied during exercise. He emphasized the fact that there is great ability to return to normal after exercise; witness our athletic meets. He put not very great weight on the arrhythmia of hearts. He referred to statistics of Surgeon Stokes which were scientific and showed very little difference in athletes and others. He brought out need of perspective in the matter and the arraignment of athletics that result sometimes from lack of it.

Professor Bowen referred to work of Roy and Adami on the question of the necessity of dilatation of heart from violent exercise, and his own on bicyclers by X-ray photos. His own work showed only slight diminution in every case.

He criticised the medical men in inveighing athletes from studies on very abnormal individuals. He wondered if the slightly hypertrophied heart is not more normal. He said the greatest strain on the heart was when one was making his spurts and not when he collapses by stopping.

Doctor McCurdy hoped the work of Doctor Middleton could be continued with control experiments on non-athletes under similar conditions, and the same on laborers and non-laborers under similar conditions. He referred to his findings in case of Marathon runners. These he found with moderate hypertrophy as they were required to be in training; that many of them had dilatation after the race but "came back," after bath. He referred to a man after mountain-climbing who fainted at 65 mm. pressure every time after exercise. Longboat's case was used to show how temporary conditions, travel, indigestion, etc., may affect blood pressure.

Doctor Storey emphasized the importance of vasomotor conditions on heart. He asked if percussion is accurate to determine

the size of heart, and if the newer method could be depended on to give it accuracy. How can we tell whether the heart we examine is normal at the start? Has Doctor Middleton data on cross-country runners and swimmers? Has there been recently an alarming increase in heart cases?

Mr. Romer asked whether a study of ages had been made and a preliminary training study.

Doctor Raycroft spoke of the large blanks in our facts on the heart and emphasized the mental effect on heart and circulation, also difference between trained and untrained.

Doctor Meylan again reported that examination of nineteen oarsmen after Poughkeepsie races showed all hearts normal. He quoted the doctor at Columbia Medical to the effect that the hypertrophy of athletes was symmetrical and that of those from clinic was asymmetrical.

Doctor Middleton, in summing up, said regarding age that rapid growth seemed to induce the conditions mentioned, otherwise he had no facts on age. He said electro-cardiograms, etc., were not to be taken against clinical findings. He believed by percussion you can map out left border but not the right border for anatomic reasons. On basket ball he thought his results were too rosy, as conditions under which the men worked were easier. He said men at lower levels show shorter life than those who climb Alps. He disagreed with McKenzie that the report of Stokes showed no difference in hearts. He said cases were, non-athletic, one; athletic, six. He quoted authorities to the effect that hearts were larger and slower, later, larger and faster. He objected to classifying athletes with non-athletes, and the former were picked men, physically. He said their facts at Wisconsin showed the athletes on a lower health plane.

Doctor D. B. Reed, in his address on "Physical Examinations and Chicago Freshmen" (page 161), stated that being dissatisfied with the old method of unrestricted election of courses, an elementary course was established for freshmen consisting of soccer, volley ball, distance-running in the fall, calisthenics, apparatus work and games, basket ball, etc., in the winter, and swimming in spring. The present system of examinations is designed to meet the following needs: 1. To prevent the individual from taking work for which he is unfitted. 2. To guard the University against communicable disease. 3. To decide which men might be excused from the prescribed course and aid them in their election. To effect those desiderata early examinations were necessary. So all muscle measurements are cut out. The examinations last twenty minutes, and with two men fifty are done each day. All are finished in two weeks. They require a urinary analysis and, if there is a history of typhoid, an examination of feces. The students whose examinations are particularly

satisfactory may have an elementary floor test, and if they pass it they can elect their work (with advice from the office). None can elect work until after two weeks. The system has been followed for three years, and the results seem to justify its use.

Discussion. Meylan, Raycroft, Sargent, McKenzie. Doctor Sargent thought the muscle measurements were very important as a stimulus to the men to develop themselves. Doctor Raycroft liked Doctor Reed's reduction of the muscle measurements. Doctor McKenzie felt that a combination of anatomic functional and medical is best. Doctor Meylan asked how the urinary analysis and fecal examinations were made. Doctor Reed replied that the former were made by the department of physiol.-chemistry each half-day and the latter by the department of biology under the supervision of Doctor Jordan.

BUSINESS MEETING.

Present: Sargent, McKenzie, McCurdy, Fauver, Fauver, Luehring, Ehler, Reed, Meylan, Samson, Savage and the secretary.

The minutes were approved.

Voted that the secretary make a record of the sessions of the society at the St. Louis meeting when the reports reach him.

Doctor Meylan reported progress on his study on the Status of Physical Education, saying he would soon send out another questionnaire, and asking for it a cordial reception and prompt and accurate answers. The committee was continued.

Doctor Sargent reported for the committee on overlapping of topics, work done with Dean Briggs and Professor Bowen.

The secretary reported for committee on Publication of History of Physical Education, by Doctor Leonard, that the work was in process, but not ready to publish. The committee was continued.

Doctor Raycroft reported for the committee on construction, "progress," reporting gradual accumulation of material though less this year than usual. The committee was requested to study the matter of reproducing satisfactorily the material in its hands.

Voted an additional appropriation of \$50 in addition to the \$17 balance from 1913, for work of this committee.

The chairman appointed as a committee on nominations, Meylan, Reed and McCurdy.

Voted that the report of the treasurer be accepted and placed on file. It showed a balance on hand of \$234.01.

It was suggested for the 1916 program that there be three classes of topics, of a practical, scientific and administrative nature.

The secretary was requested to send a message of regret to the president of the society, Doctor Naismith.

Voted that a committee be appointed to draw up resolutions on the death of Mr. Bolin, that these be spread on the minutes, and sent to his family. Messrs. Raycroft, McKenzie and Sargent were appointed.

Voted to elect to membership Geo. A. Huff, S. C. Williams, J. W. Wilce, Lewis Omer, J. L. Griffith and J. P. Sprague.

Voted that the application of W. O. Hamilton be referred to the executive committee, with power.

Voted that the executive committee be requested to act as a committee on the revision of the constitution and to report at the next meeting of the society.

Voted that the thanks of the society be extended to the Quadrangle Club for their hospitality and to Mr. and Mrs. Brine for the very pleasant musical feature contributed.

The nominating committee reported as officers for 1915, president, C. W. Savage; vice president, J. E. Raycroft; secretary and treasurer, P. C. Phillips; representative on A. P. E. A., Doctor Sargent. The report was adopted.

Voted that the time and place of the next meeting be left to the executive committee.

Adjourned, 10.20 p.m.

PAUL C. PHILLIPS,
Secretary.

N. B. The papers presented at this meeting are printed in the present number of the AMERICAN PHYSICAL EDUCATION REVIEW.

INTERCOLLEGIATE ATHLETICS AS PART OF THE WORK OF PHYSICAL TRAINING IN COL- LEGES OF THE SOUTHWEST.*

C. L. BREWER, UNIVERSITY OF MISSOURI, COLUMBIA, MO.

My topic reads, "Intercollegiate Athletics as Part of the Work of Physical Training in Colleges of the Southwest." In speaking of the Southwest I have in mind Kansas, Missouri, Arkansas, Oklahoma and Texas. In these great states we have very excellent universities and a large number of good denominational and independent colleges. The problems of physical education have been, and are, however, somewhat different from those in institutions of the East and North. Many of the institutions are new and lack money with which to do things. Some of the smaller ones are even without gymnasiums and do what work is done almost without equipment. The problem greater than these, however, is the tremendous one of educating the public up to physical training and bringing them to believe the work has a place in the educational scheme of any institution. This is especially true in the high schools, secondary schools and small colleges. A large part of this district is new; the schools are new and physical training is unfortunately usually the last thing to be provided for in the curriculum. In most sections the work is one of promotion and building. We down here feel, however, the work is being founded on a sound basis. In one respect we feel that we are building upon an especially sound basis. We are trying to spread and teach among the high schools, colleges and universities that all physical activities, and I include intercollegiate and interschool athletics, are a part of the department of physical education, and that the director of physical education shall be not only a gymnasium director, but a physical director in fact as well as name. It is this I wish to bring out in the little I have to give you. About three years ago I visited some twenty-five or thirty institutions, mostly of the North and East, to study the relation between the administration, educational organization, the department of physical education and intercollegiate athletics. I trust you will pardon me if I say some unpleasant things. I found in the majority of the institutions really two departments—intercollegiate athletics and physical education. The first seemed not to be related to the educational scheme of the institution and not responsible either to the department of physical education or the administrative heads, but

*Read before the eighteenth annual meeting of the Society of Directors of Physical Education in Colleges, Chicago, December 30, 1914.

rather to the students, alumni and the public. In many cases the director of physical education was nominally the head, but was ignored by the coaches and managers when it came to policies, schedules or coaching and supervising of intercollegiate athletics. In one great institution I suggested to one of the coaches that the physical director was in control. He laughed and said that he never came to the office, even with advice. In another place I found a director of intercollegiate athletics, a supervisor of intramural athletics, a physical director—according to the catalog—no one responsible to either of the others, with no thought of a related, comprehensive plan of work as a department of the university. In another institution I made the same suggestion. "Well," the man said. "So-and-so supervises some gymnasium work—." Then he scratched his head and added, "Well, really I don't know what he does do." There was absolutely no thought that there was any connection between the work of the two. In this institution there was a little gymnasium work and intercollegiate athletics, nothing else. The physical director was almost unknown by sight or name to the student body, and absolutely without influence. The man who was known was the football coach, and the department of physical education seemed to be the football team.

I spent twelve years in the work, and as a student in the Central North, and I realize that the conditions are the result of the old régime when intercollegiate athletics was a student affair in no way recognized by administrative heads as a part of the institution, but allowed to be run and dominated by students, alumni and the public as a plaything for playtime.

In the Southwest, fortunately, we have been largely able to build from the ground. Those of us interested have tried to spread the doctrine to the high schools, colleges and universities that all physical activities are a part of the department of physical education and that educators should recognize this work as being of distinct value in education in the building of men by giving positive credit for the work, and especially that teachers and administrators take a sympathetic and active attitude toward intercollegiate and interschool athletics with the idea of eliminating the evils but saving the good, not by negative legislation (which has never been effective) but by positive legislation, by education and, most of all, leadership by men with the right ideas and ideals, and technically trained in the work.

In the larger institutions of the Missouri Valley region all intercollegiate athletics are governed by the Missouri Valley Conference of Faculty Representatives. It is needless to discuss the rules and regulations of this body except to say that the foundation stone, laid and cemented by a gentleman's agreement of the presidents and governing boards, is that all intercollegiate athletics in each institution shall be a part of the department of

physical education and that all instructors or, as known by the public, coaches, shall be appointed by the appointing board of the university for work throughout the year, and these appointees shall be men trained in the work and the selections made on the same basis as instructors in other departments of the institution.

A similar organization has just been formed comprising the state universities of Oklahoma, Arkansas and Texas, together with the colleges of importance in those three states. Two years ago an organization was formed of the twelve small colleges of Missouri, the presidents agreeing to the same thing. I am sorry I have not the data and statistics which I have at home, explaining more in detail the work in Oklahoma, Arkansas and Texas, but I will give you very briefly what we are doing in Missouri. At Missouri we do not require any specific amount of work in physical training. The amount is based entirely on a medical and physical examination which is required of all students entering the university. One, two, three or more years or none may be prescribed as a result of this examination and subsequent ones in particular cases. Or any student may elect the work. Positive credit is given toward graduation for all work, except that the maximum credit for one semester is one hour and the maximum total four hours. The student, his physical examination permitting, may elect any of the activities of the department including intercollegiate athletics. All coaching, managing, supervising and teaching of all athletics as well as gymnasium work is done as outlined above by men regularly appointed and permanently connected with the university, so that these men are shifted from gymnasium to athletic field and back as the season and work of the department needs. Intramural athletics are promoted by a comprehensive scheme of interclass contests in each college of the university, followed by intercollegiate competition. And mind you, positive academic credit toward graduation is given as outlined above. To assist in the promotion of the above the faculty a year ago set aside the hours from four to six as a "recreation period." No other university work is permitted during those hours and it is so printed in the catalogs and class schedules. It is also specified that all training for intercollegiate athletics must be done within those hours.

In addition to the above practical work, open to all students, twenty-four hours of theoretical work and practice teaching, some of which is actual coaching, are offered in connection with the School of Education designed for those who wish to follow the work as a profession or in connection with teaching, for which full credit is given. That this has the sympathy of the faculty of this school is shown in the fact that the advisers recommend that all prospective teachers take at least some of this work. We have persuaded our faculty to believe in the above on the basis that if play, athletics (either intramural or

intercollegiate) or gymnasium work have any value, positive credit should be given. We are now attempting to carry this belief to the high schools of the state. The members of the university committee who visit, check up and advise the high schools are making this recommendation: First, that all physical activities be supervised by a regularly appointed teacher who is trained in the subject—that is, something more than an athlete; second, that interschool athletics and all physical activities be recognized as part of the school work and that positive credit on the basis of one-fourth unit be given, the minimum for credit being three hours a week. We have some thirty-five schools that have adopted this plan; over eighty have adopted the first part. One school which adopted the one-fourth unit credit reports that 70 per cent of the students are taking, or have taken, part in some activity for credit. A canvass of the schools of the state regarding the desirability of high school athletics brought out the interesting fact that in the high school where the teams are recognized and supervised as above the opinion was unanimous that athletics were worth while and of value to the school. In almost every instance of serious objection to athletics it was found there was little or no attempt at leadership, sympathy or help on the part of the teachers or administrative officers.

I wish to say in closing I thoroughly believe in interschool and intercollegiate athletics. I cannot but believe they have tremendous value to the individuals taking part and to the school or college. I feel just as strongly that most of the evils, and it is needless to say anything about them, as we have heard them all the past two days, are due to lack of sympathy and leadership on the part of educators and to the failure of the administrator of our educational institutions to enforce leadership by men with the right sort of ideas and ideals, and men who are well trained for the work, rather than great athletes. If this cannot be enforced, intercollegiate athletics cannot survive and are not worth while. I firmly believe it can, however, and that these leaders should be and must be the physical directors of our country.

PROGRESSIVE CORRELATION IN GYMNASIUM WORK.*

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The selection of a proper title for the presentation of a subject which might, on the one hand, discuss with dignity and breadth the pedagogical status and correlation of the physical education course, and, on the other hand, delve into the somewhat satirically termed "Cobwebs and Wrinkles in the College Gymnasium," becomes a peculiarly difficult matter, as the plan of this paper is not satirical, nor does it intend to merely review the magnificent work done by Storey, Meylan, Raycroft and a host of others, in elevating the standards of collegiate estimate. This term, "Progressive Correlation," will then possibly indicate the plan of discussion undertaken here; at all events, it may stand for a heading.

In the maintaining, revision and organization of a satisfactory collegiate course in physical education, the conservatism of experience and the rashness of youthful enthusiasm must both be avoided, but this body will probably agree upon certain fundamental demands which their ideals in college work would present. These might be classified as follows:

1. The physical education course must balance properly with other collegiate courses in requirements, intellectual acuity and training.
2. The principle of progression as taught in the German and Swedish systems so admirably must be as tangible and definite as in a mathematical or language course.
3. These must be capable of adequate subdivision and give satisfactory standards for both routine quarterly grading and final examination.
4. The standard adopted should hold equal emphasis with other courses in every requirement for graduation.
5. If physical limitations must be accepted in the entering student, a proper division or classification and passing standard must be devised to cover the physical invalid.
6. Student opinion, which is a potent force not to be lightly considered, must in serious degree approve the physical education work as a legitimate college branch.
7. A desirable but not absolutely essential phase should be the stimulus of personal and individual attainment as distinct from class drill.
8. In event of "course conditions" to be subsequently re-

*Read before the eighteenth annual meeting of the Society of Directors of Physical Education in Colleges, Chicago, December 30, 1914.

trieved, the work in the course to be reëxamined should be sufficiently definite to allow a concise and adequate review.

9. All conditions of discipline should be automatic as in other classwork and not referable to any form of personal dispensation.

10. The epoch of required physical training in college should command sufficient dignity and attainment to be rated similarly to an epoch of mathematics, an epoch of physics, chemistry, etc.

It will be seen from the classification presented that your speaker is approaching the time-worn and hackneyed subject of collegiate credit, and there is no reason to assume in your minds that he is not approaching it from the same old avenues. Unless, however, he is misguided, that will not prove the intention of this paper. It is rather to suggest a new central theme and if possible weave around it a system or course which will bear the scrutiny of the above definitions. This central theme might be termed a form of qualification goal, a grade of attainment which will prove an educational work to satisfactorily pass a student in physical training.

One of the frequent wrinkles of monotonous physical educational work is the habit of adhering as the "easiest way" to an old simple routine of gymnasium class drill which indicates but little to the student mind beyond a period of definite appointment to be fulfilled, as but little incentive for the majority, and but little to stimulate the interest of the director beyond his fulfilling the requirements of his salary. If, on the other hand, the physical director may be actuated by one central ambition and that is to see a constantly increasing number of his students obtain a registered standard of ability in the gymnasium, one which in a fashion may give the competitive stimulus in his own field and that rare satisfaction which is described by masters in education, that of "living into the attainments of the pupil," it is possible that much of brightness and enthusiasm may be added to the work.

The suggestions of ability described below may not be the proper standards, but let them tentatively stand for this paper, or at least until some appropriate committee report may improve upon them.

To be more explicit, if a certain percentage of our students could become sufficiently proficient and qualified in physical work to readily perform these all-round conditions of ability, could fence vault, high jump a point proportionate to his own height, could draw his body up and circle the bar two or three times (indicating abdominal control), could evince muscular strength of arms and chest by a form of chinning and dipping a certain number of times in proper form, had muscular control for a certain rope climb or body-up swing on the traveling rings, could swim a certain distance, had attained balance control on a horse

sufficiently to do a swinging cut on the side horse, understood how to tumble to a mat properly in a dive roll, or in his sophomore year a snap-up or head-spring, had mastered a simple individual exercise drill, such as a variety of club-swinging movements, do a simple chest and balance control on the parallels with a short distance swim in freshman year and an under-water swim in sophomore year,—again I repeat, if our students could master these ten points, and could pass later an 80 per cent qualification examination upon these, we might consider them as having met the gymnasium requirement, and as we empirically demand that a student should be required to habituate himself to regular exercises during the first two years in his college course, it would seem the principle of the progressive mind to grant that such students stand upon a qualification basis and should be granted all emoluments and privileges of such demands which are compatible with regular requirements of physical exercise. They should be given exceptional privileges in practicing with other representatives of the college teams and in whatever physical sports they are now qualified to undertake. They should be considered a sort of Senior Society Athletic Men, and with this distinction from other ideas already presented, this does not necessarily mean a Phi Beta Kappa or gymnastic ability. It rather means that the student has reached a standard of all-round physical control which makes him a man educated physically as he would be in other types of college work.

The student himself would have constantly in mind just what he is attempting to obtain and the form required in the performance of this work would insure the development of habits of carriage and posture which are demanded. His practice from day to day outside of hours would be upon pleasurable competition with himself in obtaining various points of ability, and it would be noted that all this enumeration is distinctly aside from exhibitivite or the so-called "gymnastic team acrobatic type" of work.

The outline of plan which later appears will demonstrate how the various parts of these suggestions are correlated.

The great point of difficulty is to correlate a form of lecture or text-book material with the practical floor department of physical work. An elaborate list of topics, such as may be examined at the desk, carries a certain amount of approval, but they are very miscellaneously selected, while from an information point of view they usually result in a single day's cramming for an examination and a rather unsatisfactory and loose subject grading by the examiner.

To obviate these points of weakness a regular lecture demonstration period for sophomores and freshmen, independently, should be instituted, perhaps following the system as indicated in the outline—the gross anatomy of the important areas of

shoulder, arm, chest, neck, back, abdomen, loins, thighs and lower legs throughout the freshman year and the more theoretical side of muscle structure, microscopy, source and supply of muscular action, muscle chemistry, heat production, the progressive principles of gymnastics and the allied gymnastic therapeutics in the sophomore year.

The various qualification standards may be more or less involved in the routine examinations of the first and second years, and the regular examinations should be made up distinctly upon combinations from the regular grade and systematic exercises of the quarter, each of which practically involves the special attainments enumerated.

To briefly epitomize, the progressive system should establish certain definite qualifications which cover the two years' physical education course. The student able to properly pass this off should be placed in work which is more congenial to him in his advanced ability. Fully 50 per cent of students with application could pass this in advance of the termination of their course and such students as could not pass this should never be permitted to replace with the other collegiate or even intramural sports the regular routine which equips the student for all sorts of physical emergency, makes him a man of upper and lower body control, and gives him the independence of a strong physical unity.

SUGGESTED GRADING.

Marking system for one hundred points on qualification tests. Three proposed systems. Major qualifications indicating ten points or nothing, major-minor 100 per cent and 80 per cent, and partial credits five divisions of two points for each event. Each event to count a total of ten points on qualification.

	10 or none Major Qualifications		10 and 8 Major-Minor Qualifications		Partial Credits 5 divisions	
	<i>Soph.</i>	<i>Fresh.</i>	<i>Soph.</i>	<i>Fresh.</i>	<i>Soph.</i>	<i>Fresh.</i>
High Jump....	4-6	4-4	4-7 4-5	4-5 4-8	8-7-6-5-4 4-4-4-4-4	6-5-4-3-2 4-4-4-4-4
Fence Vault....	5-4	5-4	5-6 5-2	5-2 4-8	8-6-4-2 5-5-5-5-5	4-2-10-8 5-5-5-4-4
Rope and Chinning....	Stand 10 Ceiling	Chin 10	Sit to Ceiling Stand to Ceiling	Chin 10 Chin 8	Standing Position 8-7-6-5-4 8-8-8-8-8	Chin 12.10.8.6.4
Swimming....	4 lengths	2 lengths	Twice around 3 lengths	Once around 1 length	6-5-4-3-2	5-4-3-2-1
Circle Bar....	3.	2.	4-2.	3-1.	(10) (7) (4) 4.3.2.	(10) (7) (4) 3.2.1.
Horse.....	(either side) Single Leg circle Double circle Feint and vault	Single Leg center Feint and vault	Estimate	Estimate	Estimate	Estimate
Parallels.....	Upper arm kept 12 swing dips	Straddle kept 8 plain dips	W. K. and 15 10	S. K. and 10 6	Wk and 15.12.10.8.6	Sk and 12.10.8.6.4
Tumbling....	Hand spr. Head spr. or Snap up	Dive Roll	Estimate	Estimate	Estimate	Estimate
Swinging Rings.....	Double Leg cut offswing	Pump 5 Swing	Double cut-off 8-6	Pump Swing 6-4	8.7.6.5.4	Pump Swing 6.5.4.3.2
Indian Clubs..	Form Series 6 movts.	Form Series 4 movts.	7 and 5	5-3	8.7.6.5.4	6.5.4.3.2

SYSTEM AS ADOPTED.

1. Sophomores and freshmen will each meet by classes in three-hour periods of each week. On alternate Mondays lecture demonstrations will be given in the theoretical work of the gymnastic work. Those for freshmen during the second quarter gymnasium work will include: practical and applied anatomy of the upper extremity; back and neck with muscles and ligaments; and the anatomy of the abdomen and lower extremities for the third quarter. For the sophomores, the anatomy and physiology

of muscle tissue, chemistry of muscle action, production of body heat, and nervous mechanism or coördination for the second quarter; general theory of physical training, gymnastic therapeutics, construction of gymnastic series (general and individual), corrective exercises for postural deformity and emergency treatment of athletics, for the third quarter.

2. The daily work in physical training will be graded upon proficiency, progress and improvement in graded work to be given. The student, excused upon qualification basis, will receive his qualification grading for the practical floor work and gymnastic examination for the given year. The final mid-year grading on the theory of gymnastics will be based upon a mid-year examination, 50 per cent for routine examination on the theory of gymnastic work and topical outline given, and 50 per cent for a floor examination, five-set tests in different pieces of apparatus, and this made up from the work taught in the quarter. These tests will be (a) Indian clubs or other light apparatus; (b) side horse; (c) parallel bars; (d) rings or horizontal bars; (e) tumbling. Students exempt on qualification will not be obliged to take this floor examination, but will be estimated from their qualification grade of the year.

EXEMPTION QUALIFICATION.

3. Early in December and early in February special qualification examinations will be given on the following general subdivisions:

Upper body control	Control of abdominal muscles
Lower body control	Strength of back
Strength of arms	Coördination
Strength of chest and shoulders	Endurance
Swimming	Agility and Elasticity

These will be obtained in exercises approximately following:

Horizontal bar circling	Free hand coördination
Parallel bar dip	(club swinging)
Control in rings in swinging	Free body control on mat
Abdominal strength and balance	Fence vaulting
on horse	High jumping
Swimming tests	Climbing rope or traveling rings

A student obtaining 80 per cent upon these qualification tests will be allowed to substitute soccer, gymnasium team work, or in proper season, track work for the required gymnasium. When weather is impossible for soccer, they may substitute voluntary floor work in the gymnasium team hour. At the request from ten men, special qualification tests may be arranged also in January

or March. Before closing the gymnastic work, sophomores will be required to have obtained ability of swimming four lengths of the pool. The gymnasium teams and those qualified to take advanced gymnasium team work will report at 5 o'clock at least three periods a week and do light wall exercises for fifteen minutes, then at the close of the required work do general heavy work.

4. Individual series of tests for qualification to be divided respectively for sophomores and freshmen. These will be definite and posted immediately after the holidays. The student may know exactly what he must attain and may devote regular daily practice toward any of the tests, as outlined above.

The physical department would prefer that a considerable number of students should promptly reach proficiency, enabling them to pass the qualification standard, which means a favorable degree of all-round body development, and those in charge will render all assistance in their power.

THEORY AND PRACTICE OF GYMNASTICS AT HAVERFORD COLLEGE.

In order to indicate the general scope of the lecture work covered in conjunction with the physical department qualifications, there follows a topical outline used until the present time for the first half-year. This has been supplanted by the system outlined in this paper, and in four lecture periods for each class given during the quarter a review of these topics is carefully covered.

TOPICAL OUTLINE, FIRST HALF YEAR.

SOPHOMORE.

1. GENERAL RELATIONS OF PHYSICAL EXERCISE.

Give general description of the nervous system.

Outline a typical nerve action—from stimulus to response.

Location of general nerve supply of (a) muscles of neck; (b) muscles of arm and chest; (c) muscles of upper leg; (d) muscles of lower leg.

Special nerve supply of deltoid, triceps, biceps, forearm flexors, forearm extensors, pectoralis major, quadriceps extensor, tibialis anticus, gastrocnemius, latissimus dorsi.

Outline general effects of exercise on the nervous system.

2. RELATION TO PHYSIOLOGY OF ALIMENTARY TRACT.

Important characteristics of blood, lymph, gastric juice, bile, pancreatic secretion.

Definite effects of muscular activity upon each.

Outline of precautions for each under athletic training.

Chemical effects in each under long continued exercise.

State muscles especially affecting alimentary tract by exercise and how.

3. SPECIAL PHYSIOLOGICAL CONDITIONS.

Chemical changes in muscular contraction.
 Relation of fatigue and exhaustion to body chemistry.
 Conditions affecting elasticity.
 Effects of exercise upon coordination.
 Conditions modifying muscular contractility.
 Conditions affecting muscular irritability.
 Head production and modifications of body temperature in exercise.

4. PRACTICAL APPLICATION OF EXERCISE.

Description of anatomical conditions in (a) Flat Chest, (b) Round Shoulders, (c) Forward Neck, (d) Lateral Spinal Curvature, (e) Knock-Knee, (f) Flat-Foot, (g) Protruding Scapulae.
 Upon Anatomical basis, application of definite muscular correction to each.

5. RELATION TO INDIVIDUAL EXERCISE.

Classification of important features of (a) Digestion, (b) Respiration, (c) Vasomotor Action, (d) Blood Circulation, (e) Nervous Action, (f) Secretions and Excretions.
 Arrangement of definite ten-minute series of morning and evening exercises to correct deficiencies in each.

FRESHMAN.

1. MUSCLES.

Origin, Insertion and Action of following muscles:

UPPER EXTREMITY.

Deltoid	Coroeca Brachialis
Supra Spinatus	Brachialis Anticus
Infra Spinatus	Forearm Flexors (as group)
Biceps	Forearm Extensors (as group)
Triceps	Pronator Radii Teres
	Supinator Longus

LOWER EXTREMITY.

Iliacus	Peroneus Longus
Psoas	Semi Membranosus
Quadriceps Extensor	Semi Tendinosus
Adductor Magnus	Biceps Femoris
Tibialis Anticus	Soleus
Extensor Longus Digitorum	Gastrocnemius

TRUNK AND NECK.

Sterno Cleido Mastoid	External Oblique
Pectoralis Major	Internal Oblique
Trapezius	Rectus Abdominis
Latissimus Dorsi	Quadratus Lumborum
Serratus Magnus	

2. APPLICATION OF EXERCISE.

Description of muscle action most directly involved in
 Running (distance and dash) Parallel bars
 High jump Side horse
 Pole vault Cricket—bowling
 Horizontal bar Football—kicking

3. PHYSIOLOGY OF PHYSICAL EXERCISE.

Physical and Vital characteristics of muscle.
 Conditions modifying muscle activity.
 Functions of skin as modified by exercise.
 Production of and changes in body heat.
 Hygiene of bathing and clothing, as related to physical training.

4. GYMNASIUM DAY'S ORDER.

Outline of normal gymnastic day's order (consult Posse Chart in office).
 Definition of gymnastic progression.
 Selected groups of exercise for special deficiencies.

5. ORGANIC BODY CHANGES IN ATHLETIC TRAINING.

Effects upon heart and arteries. General elasticity and extensibility
 Changes in lungs General secretion and excretion

Appendix.

After reading the above paper and conferring with a number of men prominent in physical training work, the qualifications outlined below have been finally decided upon as the best system for use in our department. These have been carefully tried out and seem to meet approval both from the department and student standpoint. The author would be glad to have free comment and discussion from others who try it.

HAVERFORD COLLEGE PHYSICAL DEPARTMENT.

QUALIFICATION GRADES.

The following standards have been adopted for qualification tests in the immediate future, subject to minor changes as may be necessary.

(Ten points and five points for full and partial performance.) (10) - (5)

	(SOPHOMORE)	(FRESHMAN)
FENCE VAULT (Regulation Rules)	5 ft. 6—(10) 5 ft. 3— (5)	5 ft. 3—(10) 5 ft. - (5)
RUNNING HIGH JUMP (Regulation Rules)	4 ft. 8—(10) 4 ft. 5— (5)	4 ft. 6—(10) 4 ft. 3 (5)
ROPE CLIMBING AND CHINNING	Sitting position, hand clinch only Full dist., (10); $\frac{1}{2}$ dist., (5)	Chinning bar (12) Chinning bar (8)
HORSE	Single leg cut, all around Double leg cut, all around, either side Feint and vault (10) - (5) on estimate	Single leg cut, right, all around Single leg left, all around Feint and vault (10)—(5) on estimate
PARALLEL BARS	Upper arm kip and swinging dip 15 times Each (5) - (5)	Straddle kip-up and 10 still dips (5) (5)
SWINGING RINGS	Jump up, forward roll Short swing and back cut-off (10) - (5) estimate	3 pump swings Single leg cut, each side swinging (10) - (5) estimate
CIRCLING BAR	5 circles 2 circles (10) - (5)	3 circles 1 circle (10) - (5)
TUMBLING	Snap-up, head spring or hand spring Steady form and movement (10) - (5) estimate	Dive roll, turn and back roll up (4 ft. dist., 2 ft. height) (10) - (5) estimate
INDIAN CLUBS	8 movements - 5 movements Distinct movements performed well, no opposite repetitions (10) - (5)	5 movements - 3 movements (Same rule) (10) - (5)
SWIMMING	Twice around pool Three length pool Uniform stroke, no dog paddle (10) - (5)	Once around pool One length pool Uniform stroke, no dog paddle (10) - (5)

IS WAR A BIOLOGICAL NECESSITY?*

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No one who has read that much discussed book on "Germany and the Next War," by Gen. F. von Bernhadi can have failed to be impressed with the masterly way in which he marshals his facts and drives home his inevitable conclusions.

Let me quote a few passages from this remarkable book: "War is a biological necessity of the first importance, a regulative element in the life of mankind which cannot be dispensed with since without it an unhealthy development will follow, which excludes every advancement of the race and therefore all real civilization." This is the theory of vegetable and animal life which has been set forth by Darwin, Wallace and Spencer, and epitomized in their immortal phrases, "Natural Selection," "The Struggle for Existence," and "The Survival of the Fittest."

The evident purpose of Bernhadi's book is to show Germany how she must apply these cold-blooded theories to her social, commercial, political and national life, if she hopes to survive as a nation.

Let us examine the working of these basic theories in the light of our present-day knowledge, and then see what lessons we may learn as physical directors from the colossal war now going on in Europe.

Every student of the medical sciences knows that the human body is made up of numerous colonies of cells. These cells are continually struggling and fighting to get ahead of each other in their efforts to build up the different tissues, parts, organs and systems of organs that make up the body as a whole.

At first, the cells which enter into the structure of the more important or nobler organs prevail, otherwise the human body, as a body, could not exist.

During this effort of the cells to build up an organism that may maintain a footing in the world and in its struggles with external foes, the organism may be invaded by cells or diseased germs from without, or fall a victim of the excessive multiplication of a low order of cells and tissues from within.

In order to maintain the health or wholesomeness of the body as a unit, there must be a balance and harmony of structures and function which again can only be brought about by the co-operation and limitation of all the tissues involved. For be it

*Read at the eighteenth annual meeting of the Society of Directors of Physical Education in Colleges, Chicago, December 30, 1914.

known that there is not only antagonism of muscles in the body with which we are all familiar, but an antagonism of organs and tissues that hold each other in check and preserve the integrity of the whole.

"Wherever there is an encroachment of one tissue on another, there is a disturbance of the normal balance, which readily passes into a diseased state.

"If the brain is overrun with connective tissues there is a decided lack of mental ability; if the heart is overrun with fatty tissue, there is a diminution of cardiac power.

"If on the other hand, connective tissue is deficient, epithelial tissue runs to excess, no longer limited by its normal antagonist, and pus or cancer results."*

Now the saddest lesson that biology teaches us is that as soon as the body begins to decline in youthful vigor, and the power of senescence or growing old, sets in, connective tissues and the lower forms of cell life rapidly increase, and the nobler organs can no longer maintain their functional power.

In other words, the human mechanism is at the highest point of organic vigor when all of its individual cells are young, and struggling and contending in their efforts to do constructive work. During this struggle the weak and debilitated, or used up, cells are destroyed and new and stronger cells come forward to take their place.

This may be termed the internal struggle for existence, and as soon as it ceases the body enters upon a period of stagnation and decline, followed by death.

The struggle with which Darwin and Wallace have made us familiar is the struggle that is going on throughout the external world among all forms of animal and vegetable life—a struggle in which, as there is not room for all, the weaker and less adapted succumb, while the stronger and better adapted survive and multiply.

"Among animals, the creatures that are most in harmony with surrounding circumstances have a daily and hourly advantage over those which are less in harmony; live when they die; flourish when they fade; endure through what kills others; can find food, catch prey, escape enemies, when their feebler, slower, blinder brethren are starved and slain.

"The same law of struggle applies to primitive races of men. There the most perfect specimens of each race and tribe, the strongest, swiftest, the healthiest, the most sagacious, the most courageous, live longest, feed best, overcome their competitors in the choice of mates; and in virtue of these advantages become—as it is desirable they should be—the progenitors of the future race.

*Lewes. "The Nature of Life."

"The poorer specimens, the sick, the foolish, the faulty, the weak, are slain or drop out of existence; are distanced in the chase, are beaten in the fight, can find no females to mate with them; and the species is propagated and continued mainly, unceasingly, if not exclusively, from its finest and most selected individuals—in a word, its élite."*

Thus is established what Herbert Spencer called "the law of the survival of the fittest."

No one will question the beneficence of the principles of natural selection, and the struggle for existence when applied to animal and vegetable life.

When applied to civilized man, however, these principles must be somewhat modified in order to be in harmony with other laws and influences to which he is subjected.

Man has changed but little in his physical conformation during the past 4000 years. True, he must adapt himself as animals do to altered conditions of external nature, but he does it by mental, not bodily, modifications.

As with them, inferior varieties and individuals succumb and die out in the eternal and universal struggle for existence; only in the case of man, the inferiority which determines their fate, is not so much inferiority of muscle, of stomach, or of skin as of brain.

In attempting to apply these principles of biology and evolution to social, commercial and national life, it is a question whether we have not run into certain fallacies which it would be well for us to consider.

Because animals and plants have advanced to perfection of organization by means of the struggle for existence and the consequent survival of the fittest, it need not necessarily be inferred that men in society, men as ethical beings, must look to the same process to help them towards perfection. As Huxley pointed out a long time ago—a sudden change in climate or methods and habits of living, might make an inferior race of beings (from a moral or ethical point of view) the best fitted to survive. "The practice of that which is ethically best—what we call goodness or virtue—involves a course of conduct which in all respects is opposed to that which leads to success in the natural struggle for existence. In place of ruthless self-assertion it demands self-restraint; in place of thrusting aside, or treading down, all competitors it requires that the individual shall not merely respect, but shall help his fellows; its influence is directed not so much to the survival of the fittest, as to fitting as many as possible to survive. It repudiates the gladiatorial theory of existence. Laws and moral precepts are directed to the end of curbing the cosmic process and reminding the

*Wallace, "On Natural Selection."

individual of his duty to the community, to the protection of which he owes, if not his existence itself, at least the life of something better than a brutal savage."*

In the opinion of many thinking men of to-day a society or an institution, a municipality, a state, or a nation are huge organisms governed by the same laws that govern the human organism, and where a strong tendency to individualism, as opposed to collectivism, prevails, there is an inclination to apply the analogy of cosmic nature (i.e., struggle for survival) to these great social or political bodies.

Every great social organism has a character, individuality and personality that distinguish it from every other organism. Emulation, rivalry, jealousy, anger, hatred and kindred emotions which stimulate the efforts of individual men in their struggle for supremacy—are frequently bred and fostered by these larger organisms in order to incite their members to greater exertion in their endeavors to meet the merciless competition of the age.

The social, economic and political advantages afforded by the working of these large units, are bringing them more and more into existence. They are powerful agents for good or for evil; and how to manage them so that the results of their labors will be just and equitable is a burning question.

Corporations, proverbially, have no souls, and the early life history of insurance companies, savings banks and the financial wreck and ruin that attended their primitive development, justify the assertion. Perhaps the most charitable view to take of the life of these large organisms is to assume that because they are the youngest and represent the latest phases of evolution they must necessarily go through the same processes of development from savagery and cruelty to refinement and good will that the individual man has passed through.

As large corporate bodies are supposed to be impersonal so unscrupulous men may do things under their cover and protection which they would shrink from doing as individuals; moreover, if the evil transaction is profitable or advantageous to the organization, whether it be a business house, school, church or an athletic team, the offense has in the past been too frequently condoned, and the ethical development of the organization delayed. It is gratifying to observe at the present time that there is a tendency everywhere in civil life to do away with primitive method of struggle and competition and to bring even the most strenuous transactions under the rule of law and order. There is a gradual awakening of a socialized conscience. Individual members of the community are beginning to realize that they cannot afford to be connected officially with any kind of organization that has a lower ethical standard of conducting its affairs

*Huxley, "Evolution and Ethics."

than the standard the individual sets for himself. A good credit, a reputation for straightforward, square dealing, consideration for the welfare of employees and courtesy to rival concerns, as well as to prospective customers, are the most valuable assets that any business house may possess. And yet the stress and strain, the keen competition, the care and anxiety and the never ceasing effort to advance or hold one's own in the struggle for existence is greater in the commercial world than in any of the other affairs of life. Another illustration of the possibility of making civilized methods of struggling and contending for supremacy take precedence over barbaric methods may be afforded by the history of athletics. Within the past fifty years some of us have seen whole communities thrown into open revolt during which the two factions fought with fists, sticks and stones over the decision of an umpire in a baseball game. We have seen two six-oared crews who had come into collision stop rowing and fight each other with their oars. We have seen individual football players on the football field deliberately kick, knee, slug and throttle rival players in their efforts to put them out of the game. We have heard gray-haired and reverend professors shout, "Down him," "Drag him out," "Kill him," while rushing madly up and down the side lines of an intercollegiate football game.

Moreover, we have been told by schoolboy athletes that some coaches have deliberately taught them to resort to foul tactics if necessary to overcome an opponent, and we have read in the year book governing the rules for games of football back in the early eighties, a rule which permitted of such brutal savagery as hacking, throttling, striking with closed fist and so forth, and we have read another rule in the same book making it impossible for the umpire to put the offender off the field until he has permitted these offenses against common decency, fair play and good sport, at least three times.

We have mentioned a few of these little "pleasantries" of the past in order that you may realize by contrast how far we have progressed away from these savage practices in conducting our athletic sports, some of which have been compared by some people to war itself.

Yet few of us would be prepared to say that the athletic contests of to-day are not more strenuous than they have ever been before.

We have thus seen that *struggle* is the law of life among the colony of cells that compose the human body, among animals and the primitive tribes and races of men, and among the various organisms, social, educational and commercial, that constitute human society. We also have seen that in the human body as well as among the social organisms that the nature of the struggle was modified, neutralized or held in check by other forms as the individual developed, and civilization advanced.

These forces were among men chiefly mental and moral as opposed to physical forces.

If our premises hold good, and there is any truth in the analogy between the human body and social organism, then the struggle between nations which are made up of a collection of organisms or a conglomeration of individuals should be modified in a well-balanced state by the same forces that hold the struggles of individual cells and individual men in check. *Struggle* is a biological necessity, for the life of the body as a whole depends upon it. In my opinion war cannot be considered a biological necessity among civilized peoples unless the life of the nation is threatened by starvation, by an internal uprising or by an invasion of an avowed enemy.

In coming to this conclusion, we are not contending that war is not sometimes a moral, social, economic or political necessity, nor are we contending that many of the wars of the past have not been most powerful factors in developing individual men and advancing the cause of civilization; for history is filled with accounts of great and serviceable achievements that have followed human conflicts. Let it never be forgotten that the word "exercise" is derived from the Latin word "exercitium," first applied to the military exercises of the Roman soldiers.

Most of the portable apparatus now used in our gymnasiums, such as shots, or stones, bar bells, quarter staves or wands, indian clubs, single sticks, javelins or spears, and bows and arrows, fencing foils and sabers, were once weapons used in warfare, and the heavy apparatus, such as storming boards, scaling ladders, scaling walls, climbing poles and leather covered horses and boxes, have all played their part in training soldiers for the battlefield.

Many of our athletic sports have their origin in their supposed resemblance to personal conflicts, in their attack and defense, flight and pursuit, etc. The antagonistic sports, such as wrestling, boxing, football, come nearer to real war than any other, and one great source of their present-day popularity is that they awaken in us those primitive fighting instincts that have developed through centuries of fighting and contending.

It is just here that the dignity and importance of the work of a physical director come to the front. We have seen that *struggle* is a biological necessity and that all parts of the human organism are continually fighting for their just share of the body's nutriment. If any part of a body fails to get this nutriment and becomes weak and debilitated, or if the body is invaded by germs that are foreign to it, war is the inevitable result. In this case, however, war is the united effort of the whole organism to overcome or throw off a diseased condition. If the fighting cells of the body are strong and vigorous enough to meet this

situation and if the internal structure has been built up capable of standing the strain, the individual lives; if not, he dies.

Whether we consider the human body, the body corporate or the body politic, the same fundamental facts hold true. We must continually look after the vital condition of the individual units. In a word, this is the province of physical education in its noblest sense.

Now what are some of the important lessons that we may learn from the European war?

In the first place, modern inventions, including the aeroplane, submarine, machine guns and cannon of superior range, have completely changed the art of war. The opportunity for personal prowess and heroic valor which distinguished the wars of previous generations are absolutely wanting at the present time. Burrowing in the ground, digging ditches, constructing trenches and shooting for the most part while continually under cover, constitutes a large part of the present work of the soldier. According to the letters from the men who are at the front, present engagements are dull, stupid and monotonous, compared with the battles of the past which have been immortalized in song and story. As for naval engagements, they are fought at such long range that a man never sees his enemy, and yet a battleship and its entire crew may be sent to the bottom by a submarine or a floating mine, without a minute's warning.

This kind of warfare tends to cultivate Asiatic fatalism instead of Christian heroism as is often claimed for it. Indeed, the moral qualities called for in the present war are so common among men that the question often arises whether it does not require more courage, certainly more fortitude, to live and fight continuously for a cause than it does to die for it in the trenches. Certainly the best attributes required of the soldier are not born on the battlefield. They are developed in our schools, colleges, athletic grounds and gymnasiums. It is in these institutions that we must develop in our youth the mental acumen, moral courage and physical hardihood that tend to win out in all of life's struggles. It is in these institutions that we should foster the fighting instincts and cultivate the fighting spirit, for the future of the race depends on the ability of the best to maintain a footing in the world and fight for the highest ideals and standards.

"Ill fares that land to hastening ills a prey, where wealth accumulates and men decay." There is no better way of teaching the young the great biological lesson of struggle as well as the ethical lesson of right living than through participation in athletic sports and games. Athletics properly conducted are constructive in their nature and tend to the upbuilding of the race, while war is terribly destructive in its nature and by killing off the most fit tends to the deterioration of the race.

While war is a possibility, several corollaries follow from our



argument as a matter of course. First, since less than 50 per cent of the male population are physically fit for military service we must so conduct our gymnastics and athletic work as to improve the physical condition of the masses. Second, since of the 50 per cent of picked men selected for service, fully one-half of that number are killed or die from the effects of wounds, accidents or disease, the salvation of the race would seem to depend largely upon the health and strength of our women. Inasmuch as women represent one-half of the great human family and transmit through heredity the athletic ability of the father as well as the conservative power of the mother, the physical welfare of the women is as important, if not more important, than the physical training of men.

Third, since the athletes of the country are the ones to whom she has a right to look for defense and since rapid mobilization of troops and accurate rifle shooting have become such important factors in modern warfare, it would seem to be the duty of patriotic physical directors to coöperate with the general military staff of the government by teaching U. S. military tactics as a part of their marching evolutions and to make provision in their respective institutions for the practice of rifle shooting, military hygiene and first aid to the injured.

Fourth, finally, the most important lesson taught us through biology as applied to human affairs is as nations advance in years, and begin to decline, the best tend to grow fat, flabby and lax, grow weary of the struggle, give up the fight and are finally overcome by the unfit. Now this presages for America what Macaulay prophesied long ago: that the enemies that we have most to fear are not those that will attack us from without, but those that will disrupt and overwhelm us from within. To postpone this day for our country and its institutions, it behooves the leaders of our people to seek for a harmonious adjustment of its various organizations and to learn what the victorious Harvard football team and its supporters learned this year, perhaps better than ever heretofore, the value of sympathetic, unselfish coöperation as opposed to selfish, deadly, ruthless competition.

RELATION OF ATHLETIC SPORTS TO INTERNATIONAL PEACE.*

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This paper is an attempt to ascertain whether national athletic sports may be useful in the securing of international peace. It takes for granted that such sports have proven of value in the past in making nations more efficient in war but submits the possibility of their use for the furthering of peace. It suggests certain lines along which educators and, in particular, directors of physical education, may work to this end.

The European war now in progress may, from the very enormity of its consequences, bring about some practical form of international conciliation among civilized nations, an end devoutly to be hoped for and one which, if permanent, is worth the cost. Such a sudden stride in the slow progress of humanity is not unprecedented; witness the granting of the Magna Charta. If, however, as is more usual in history, a longer and more complete education of the individuals comprising these nations proves necessary to assure the adoption and permanence of such a plan, and should these suggestions assist in any degree in furthering such education, this paper may have more than academic significance.

It is assumed that international peace is desirable. While recognizing the immense biological significance of the fighting instinct in the survival, the development and progress of the individual and the nation, and acknowledging that from whatever depths of human life, present or past, even bestial, this instinct comes, it is a pervasive and dominant force, and that without it men and nations would be but spineless and bloodless things, we favor the view that the amicable settlement of the disagreements of nations is not incompatible with the proper development of this instinct. We believe that the "survival of the fittest" among the civilized nations to-day does not require the ultimate test of life and death as in lower animals, but may be nourished on more peaceful competitions—competitions based on the conditions of modern civilized life. The word civilized is used here advisedly, for while to most the progress of civilization demands ultimately the peace of the world, others like Treitschke—to quote from his essay on the army—believe that "to do away with war would be to cripple human nature," and that "war is just and moral and that the idea of eternal peace is both unjust and immoral and impossible."

*Read before the eighteenth annual meeting of the Society of Directors of Physical Education in Colleges, Chicago, December 30, 1914.

Even the acceptance of this view, however, does not exclude the desirability of a peaceful settlement of international differences, provided fundamental principles of government and national life are not sacrificed, and the opportunity of "self-assertion," as Nietzsche would have it, is given. Peace is to be desired whether it is a permanent international peace, controlled by the tribunal of international public opinion, or modified international peace when peace becomes more and more likely because of the increasing education of the race.

The thesis that gymnastics and athletic sports may be made valuable to a nation as a preparation for war is easy and time-worn. Greece, with her Olympic sports, is the crowning example of ancient times. France, thanks to Coubertin, is the finest evidence to-day. Horsemanship, archery and the tourney made more powerful in battle the nations which used them in the age of chivalry, and the *Taighltan* games of Ireland, from remote antiquity, have made the Irish the finest of soldiers. What Ludwig Jahn did for Germany with the *turnverein* and P. Heinrich Ling for Sweden with his military gymnastics, is now common knowledge. The pages of history prove beyond a peradventure that both in the wars of olden time, where the personal encounter predominated, and in modern warfare with siege guns, aeroplanes and submarines, training in athletic sports is of great value. The words of Wellington, that the battles of England were won on the playgrounds of Eton, are paraphrased in the recent statement of Lord Kitchener that no matter how many were shot, a country so fond of athletic sports as England would never lack for officers. Athletics train not only the man behind the gun, but the admiral and the general. The introduction of gymnastics and athletic sports into the military and naval schools of the great powers, notably at Aldershot and Annapolis and West Point, is a sufficient evidence of the acceptance by modern nations of this thesis.

That nations or tribes continually at war sometimes develop great military prowess without national sport does not refute this, for in war itself, the peoples receive the physical and mental training which adapt them for it. It is in the "piping times of peace," however, when prosperity and security frequently lead to indolence, inertia and apathy, that the introduction and development of vigorous athletic sports best evince their transforming power over national physique, and the consequent improvement of military efficiency; witness Germany before Jahn, and France before Coubertin. The physical director in particular must watch with peculiar interest the struggle between French and German armies to-day, since Coubertin's inspiration for the modern Olympic sports was to improve French physique which he found low after the Franco-Prussian war.

That the very general practice of athletic sports does not of

necessity make a nation combative is well illustrated by Great Britain and America. Here are possibly the two most sport-loving of civilized nations, they are from a military standpoint strong, and could be stronger if they desired, yet historically they have been for many years desirous of peace.

But can the very antagonistic sports which have been made use of to fit peoples for war be made a positive constructive force for international peace? This is the seeming paradox of our inquiry.

There are those who hold that the simple hygienic effect of proper athletic sport favors in the individual a peaceful rather than a combative outlook on life. I believe there is something in this. The individual of high tension and increased irritability, which frequently results from lack of exercise, is more apt in my opinion to be pugnacious than his better exercised brother. That our remote ancestors fought much, although they had plenty of exercise, is not a refutation, as they had not our ideals.

It has been claimed that Coubertin stated as one of the possible results of the modern Olympic sports the better relation between nations, because the association of these athletes and their representatives at games and on committees would lead to a better understanding of national sentiments and aspirations; that is a claim for these sports as an agency for peace. Results have not seemed to justify this claim and recent reports are to the effect that Coubertin disclaims having made such a statement. We shall not give weight to this view.

It has been frequently claimed of late by eminent educators that the chief values of athletic sports are not hygienic or motor, but educative, social and moral, that herein athletics are more valuable than gymnastics, group games than individual exercises. Philosophers have told us that by play, not by study, the character of boys and young men and of girls also, was most largely formed, that athletic sports were the best means for the training and development of the will. What has been most universally accepted is that team play presents the best field for education in altruism. To these teachings the experience of most directors of physical training gives assent.

The waging of war at bottom and essentially is granted to be an ethical question. That each nation engaged in the European war to-day is attempting to prove to the world that she was morally justified in declaring it—"more sinned against than sinning"—evidences their acceptance of this principle. Even the Deity is invoked for His assistance and blessing on a "righteous cause."

If one word is used to express the cause of war to-day it is "competition"; national and racial antipathies, resentments and the like formerly caused wars and precipitate them to-day, but the fundamental causes are competition, economic, geographical,

social, cultural. It is when nations enter into competition, commercially for example, and this competition runs high, the rivalry keen, each trying every possible means of getting ahead of the other, that they examine carefully the acts of their competitors to see if they are righteous, or conform to the international law of the day. If they do not, demands are made, which, if not complied with, may be considered a *casus belli* (the last appeal). It was to settle a doubtful question and to prevent the latter, that international law originated.

There is no law of which the biologist seems surer than that each individual recapitulates within himself the history of the race to which he belongs. This law is well exemplified in the fighting instinct where the play, the game, the antagonistic sports follow the line of evolution to the man himself—and this should not be forgotten—this same instinct is carried in a more (or less) civilized way into the future life, business—professional or what not—of the man.

If, as we have assumed, the bringing about of universal peace, or of some plan which will better international relations and tend to prevent war, depends for its permanence on education largely, to what can this be better directed than the training (not the elimination) of the fighting instinct. The slap of the little child, the school fight of boys, the strenuous football games of colleges sometimes seem simple enough things in themselves, but I am convinced that they should receive serious study in this quest for a remedy for war. "Lick him!" "Lick him!" "Lick him!" We hear on the schoolyard to-day. "Fight!" "Fight!" "Fight!" we hear at the end of the last quarter of football. The boy's interests are there, his sentiments are there, the barbaric man rises within him there. It stirs us to see these elemental passions aroused and yet, without being sentimental, we know that if these passions are not controlled by higher, ulterior motives, the boy is getting fundamentally maleducated. He will go out into life with a chip on his shoulder and fight for small things or nothing—just to fight. If, on the other hand those who are responsible for him can, during these periods engraft ideals, the thought of a great cause, of injured humanity, of fairness to his opponent, so that in the strain of competitions, these higher motives control, he is being trained for a citizenship which will be strong, but peaceable, generous, magnanimous.

The group games if rightly used, and the stage of individual development is right for them, develop team work, helpfulness, fairness to others in small or large groups. In these games may be developed a willingness to submit disputed points to unprejudiced officials, a referee, or an umpire, and to abide by his decision.

The development of such qualities it seems to me, both theoretically and from experience with some athletes, cannot but be

helpful in the national education against war. The sublimation of the fighting instinct means the development of a strong and positive altruism.

You may say that this is begging the question, that it is really the development of national ideals that is fundamental, and that these will eventually elevate sports. True, there must be now, as ever in history, those higher ideals in the minds of a few, sometimes one, like Luther; but granted those, is it not important to discern the best method of putting them into practice, of realizing them so far as is possible?

That is the *raison d'être* of this paper, to ask the directors of physical education whether, in its essence, the question of waging war is not one of international sportsmanship; and also, if the proper training of the youth of the nations in sports will not be helpful in bringing about sportsmanship in the nations themselves; and in also inducing a greater willingness to submit disagreements to arbitration. Will not such training eventually demand sportsmanship in its rulers, and if the form of government does not give them voice in the matter, demand a kind of government that must recognize such fundamental demands?

If the answer is an affirmative to these questions, is not a serious responsibility placed upon all who have to do with the training of youths in plays and games, to make sure that this important education of the fighting instinct is properly appreciated and efficiently done?

It would take too long to elaborate in this paper the methods by which these seemingly desirable ends may be secured. I have no program to suggest for such a work. It should be carefully and thoroughly worked out by the psychologist and educator, and must be persisted in patiently for years, possibly generations, before its effects can become evident. But if it proves helpful the end will surely justify all the energy expended.

Of one thing we may be sure, that each nation will be settling its own problems in athletics in its attempts to solve the larger one of international sportsmanship.

THE EFFECT OF ATHLETIC TRAINING ON THE HEART.*

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From the medical standpoint the study of the effect of athletic training on the heart involves a consideration, first of the physiology of physical exertion, and secondly of the possible pathology of physical exertion carried beyond the normal limits for a given individual. Athletic sports from their fundamental nature may be divided into two types: those of short and sudden effort, and those of endurance. The cardiac effects of physical exercise may be grouped as immediate and ultimate.

The physiology of prolonged severe muscular strain has been worked out to certain points of general agreement, namely:

1. Increase in cardiac activity resulting from muscular exertion is accompanied by a rise in the systolic and the diastolic arterial blood pressure, as well as in the venous blood pressure.

2. The systolic arterial pressure increase is greater than the diastolic, resulting in an increased pulse pressure. With acceleration of cardiac action there is augmentation of the systolic wave of output. From the fact that the systolic pressure fluctuates more than the diastolic, the pulse pressure curve usually follows the contour of the systolic curve.

3. The systolic pressure curve increases to a maximum in exertion, but may decline somewhat only to increase again to the maximum on renewed exertion. The normal line is not reached until cessation of muscular effort, however, when the systolic pressure drops not only to, but below, normal. As a rule the rise to a maximum and the fall to the subnormal level are slower for the diastolic curve than for the systolic. The fall of the diastolic pressure to the subnormal level after exercise is invariable.

4. The maximum level which the venous pressure reaches on exertion is maintained throughout the period of increased effort, unless the exercise be not severe, and deep breathing come on, when it may drop to normal during exercise. Severe effort with rigid chest and closed glottis causes especially high venous pressure, and at the same time the blood pressure is increased more than the heart rate. Venous pressure, as a rule, drops rapidly to normal after exertion.

5. The pulse rate rises rapidly at first with exertion, but does

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not reach its maximum level as soon as the blood pressure. The fall of the pulse rate after exertion is much less rapid than the blood pressure fall, and does not as a rule reach a subnormal level. Occasionally, a secondary rise of pulse rate is noted, "a reflex effort due to low blood pressure of the subnormal stage."—(Lowsley.)

6. The low pulse pressure after prolonged exertion resulting from a more rapid fall of the systolic than diastolic blood pressure (Lowsley) may be accompanied by an albuminuria, similar to that described by Erlanger and Hooker.

7. "Rapid exercises, vigorous, fatiguing and exhausting, are followed by a fall of pressure below normal, which lasts longer than after moderate exercise, even if the former is continued for a very short period, and the latter for quite a long period of time."—(Lowsley.)

8. "Long-distance running races and similar forms of exhaustive exercise give rise to a serious strain on the heart, as is indicated by the long period of subnormal blood pressure."—(Lowsley.)

9. Relative or functional murmurs in hypertrophied hearts may temporarily disappear after severe athletic contests; on the other hand, like murmurs may appear in the heart, where none has previously been heard.

As to the morphologic changes in the heart outline on prolonged exertion, investigators (Schott, Barach and others), making use of the physical measures of percussion, fluoroscope, or roentgenograph, have determined some temporary cardiac dilatation, while by orthodiagraphy Moritz and others have found the heart to be smaller after than before physical strain of varying degrees of severity. Raab found by orthodiagraphy that pathologic hearts respond to exertion by a reduction in size very frequently, but occasionally there is dilatation. A potent factor entering into the difference in the results obtained by the different methods is that of the exact time of the examination. As a rule in the orthodiagraphic work the blood pressure readings at the time of the observations have indicated the existence of the subnormal phase; and the morphology of the heart, which on cessation of work has already contracted possibly to below its normal size, must essentially differ from that of the heart under the strain of high blood pressure during the period of exertion. The time consumed in the rather tedious procedure of orthodiagraphy rather limits its usefulness as a means for determining the immediate effect of prolonged exertion on the size of the heart, and investigators using this means alone have little ground for the assumption that only hearts weakened by infectious disease or other extraneous causes can dilate during muscular exertion.

Although we have no direct means of determining the size of

the heart during violent exertion, we do know that there is rise in both systolic and pulse pressure and in pulse rate. These factors mean in the presence of a normal myocardium, more rapid and forcible heart action with greater output at each systole. With a dilatation of the vessels of the skin, partially counterbalanced by a contraction of the vessels of the splanchnic area (Hooker), and an increase of blood to the skeletal muscles of fivefold, we have a high blood pressure maintained with a large area of vasodilatation. Two factors are, as a rule, concerned in the increased work of the heart on exertion, increased cardiac rate and increased ventricular output. During exertion the cardiac output may be increased three to ten times. These facts are fair proof that the diastolic dilatation may be more marked under exertion than at rest, and the systolic contraction more effectual.

Venous return to the heart depends in a large degree on the pumping action of the muscles on their blood vessels. Then, too, with exertion the increase of combustion products in the blood directly stimulates the respiratory center, and the pumping action of increased respiratory rate forces more blood into the left auricle. On cessation of exertion the muscular pump stops and the respiratory pump gradually slows down. The heart, having less blood forced toward it, works on a smaller volume; therefore, it dilates less than normal during diastole and ejects less blood during systole. The contracted state of the heart and its compensative mechanism for obtaining the greatest degree of rest lead to a low pulse pressure. Moritz states that after prolonged severe exertion the heart remains contracted for hours or even days.

From the standpoint of the possible pathology of overexertion, depression of myocardial tone may allow diastolic dilatation of such a degree as to make systole incomplete. We are then facing the possibility of acute cardiac dilatation. The mechanism of this condition varies with the cause.

In the case of sudden severe muscular overstrain we have, through the sudden general muscular contraction of the skeletal muscles, a heavy load of blood thrown on the right heart, increasing venous pressure. The muscular contraction likewise markedly increased the peripheral resistance by reduction of the lumina of the vessels in their substance, and by actually forcing the blood back into the arteries. Increased cardiac activity adds to this increased pressure in the peripheral circulation, increasing its own load. Violent effort is always made with the glottis closed and under great expiratory pressure. Although this increased intrathoracic pressure may embarrass free cardiac action, nevertheless it may possibly support the myocardium in resisting increased venous pressure. To a certain limit, such a strain stimulates the normal myocardium to stronger contraction. Prior to the actual experience of such an occurrence it is impossible

to state the capacity of a given individual to withstand the extremes of physical overstrain.

Free, rapid respiratory action and greater freedom in cardiac action characterize endurance events. Venous pressure is lower and needs not to be resisted by high intrathoracic pressure. Prolonged, rapid action and the toxemia of accumulated fatigue products lead to a lowering of myocardial tone, and increase the liability to acute dilatation. Lewy (1896) states that since the diastole of the heart is more reduced as a result of increased cardiac activity than is systole, long continued overactivity of heart action through an interference with nutrition may lead to a depression of myocardial tonicity. Frequently, acute cardiac dilatation occurs in endurance events, when a man endeavors to put forth an extra spurt toward the finish of a distance race.

Case 1361 (Shumacker and Middleton, 1914) is a case of this type, and his experience and history are worth quoting. After three years in the distance runs in the University of Wisconsin, examination revealed a simple moderate cardiac hypertrophy. Two months later he experienced the following in a mile race: "It was the last lap, and I was feeling as fine as I have ever felt. I was running even with the first man, and just put on the extra spurt to pass him as I had done in every other race, when suddenly everything grew dark. For the rest of the race I was semiconscious. In fact, I know nothing of the remainder, but the fellows say that I started to sway and stagger, lost my speed, would then straighten out again and thus finished the race in the fifth place: I fainted as soon as I crossed the line, had to be carried from the track, was laid on the grass and slowly recovered. Then cramps in stomach began." The abdominal condition proved to be one of hepatic congestion. Eleven months later, compensation was good, but the cardiac dullness was enlarged three-fourths inches to the left and one-fourth to the right.

This return of an acutely dilated myocardium to a relatively normal tone is not a constant one. In proof whereof the following case might be requoted (Shumacker and Middleton): *Case 0802*: An excellent physical type, in so far as ordinary examinations could ascertain, of normal circulatory function on entrance to the university. Rowed one year on the freshman crew, and was for a time on the freshman football squad. Prior to the accident which we are about to relate, he had been rowing on the machine after coming in from skating. While under the shower, he collapsed, and the condition was diagnosed by Dr. J. S. Evans as cardiac dilatation. Subsequent examinations have shown secondary hypertrophy, but with persistence of tachycardia, arrhythmia and relative murmurs, so as to leave no doubt as to the existence of a definite, permanent, myocardial lesion. The accompanying Figure I is drawn from the roentgenogram of his heart.

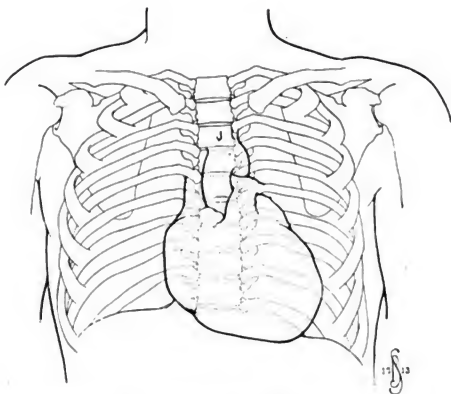


FIGURE I. CHRONIC MYOCARDITIS FOLLOWING ACUTE CARDIAC DILATATION.



FIGURE II. ACUTE CARDIAC DILATATION.

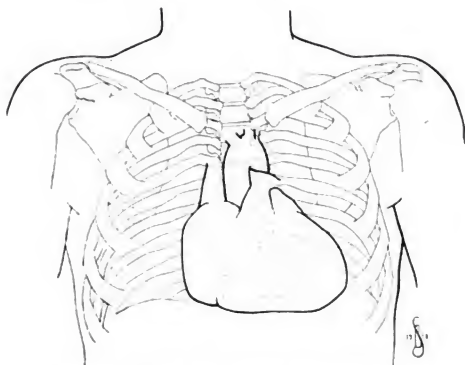


FIGURE III. ATHLETIC HYPERTROPHY OF HEART.



FIGURE IV. HEART OF A SPRINTER.

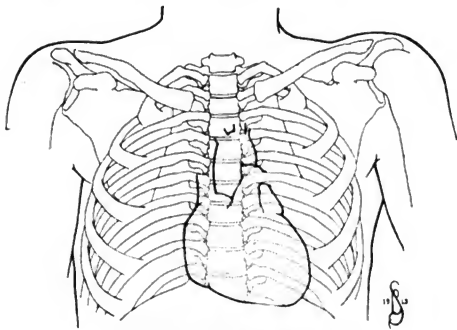


FIGURE V. NON-ATHLETIC HEART.

For a comparison we present Figure II representing the extreme of acute dilatation, III of a simple hypertrophy without dilatation (from a functional standpoint), IV of a sprinter's heart, and V representing the non-athletic heart. Particularly in Figure I would we direct attention to the general globular shape of the heart, as compared with the flat heart of simple hypertrophy. This condition or alteration in the morphology of the heart is due to two factors, right ventricular dilatation and bilateral auricular widening.

We have been in the habit of glossing over the dangerous nature of acute cardiac dilatation. Cardiac dilatation of such extreme degrees as we have noted in six University of Wisconsin athletes can hardly be classed as a "matter of economy" (McKenzie) in the expenditure of energy, but the syncope resulting from this occurrence is nature's last safeguard in the removal of high peripheral resistance, the cardiac side of the cardio-vascular mechanism having proved inefficient in meeting the demand.

Case 0802 fails to bear out the general assertion of the transitory nature of such cardiac accidents. At the present time, two years since his acute cardiac dilatation, a state of imperfect compensation still exists. We have no evidence to bear out the statement that "murmurs always appear and slowly fade away: after the most severe strain, one can seldom find any measurable injury in a week's time in a heart originally sound, if the athlete has not passed thirty" (McKenzie). On the contrary, none of the six acute cardiac dilatations has approached the circulatory condition existing prior to his dilatation. Two of these cases might pass examinations for permission to train, but

even this is questionable. Mackenzie states that the murmurs of acute dilatation are the result of a depression of the muscular support of the auriculo-ventricular orifice, a much more serious matter than simple mural myocardial stretching. Beck, in speaking of the dangers of mountain climbing, states that frequent repetition of moderate cardiac dilatation leads to organic cardiac lesions, a point to be remembered in the occurrence of unexplained lesions in athletes. Several cases in our records seem to contradict the belief that no undiseased myocardium can be so strained by muscular effort as to dilate acutely. Of course, practically any infectious disease may be the etiologic factor in an acute cardiac dilatation, where physical effort is the determining or exciting cause. Special care is therefore required to eliminate possible infectious or social causes in any given case.

Passing from the immediate effects of physical exertion, we approach the question of the effect of training or repeated severe athletic contests on the heart. As the cardio-vascular mechanism accommodates the increased load of sudden strain by certain previously described compensatory measures, so the increased physical work of a period of training must be met by certain circulatory changes.

The human organism is constructed on the basis of a wide margin of safety. For instance, the heart under severe muscular effort can respond to needs far in excess of those in normal physical activities. Strenuous exertion may increase the cardiac work thirteen times (Lewy), and the blood thrown out at each systole may be increased sixfold.

Clinical observations on the enlargement of the heart with the beginning arterio-sclerosis of middle life and on the hypertrophy resulting from valvular lesions, either pathologic or experimental (Hasenfeld and Romberg), lead to the conclusion of the existence of a very definite trophic capacity in the myocardium.

The physical requirements of certain occupations may determine hypertrophy of the heart (Schieffer and others). Kulbs has experimentally, by working one pair of dogs while a like pair rested, proven the development of a true simple hypertrophy with prolonged physical effort. The observations of Schieffer revealed that comparatively few Germans have hearts large enough to compensate for the physical demands of their military service, and as a result cardiac hypertrophy is the rule. Carrying the question of cardiac size into the field of competitive sport, Barach (1910) determined that a certain degree of hypertrophy was necessary to successful endeavor in Marathon running.

A mooted point arises in the terminology of hypertrophy, whether it be physiologic or pathologic. It is easy to conceive of an enlargement of the heart arising in response to a continued demand for increased cardiac power in the presence of sufficient nutrition. We must assume the demand to be a normal

one, since for ordinary activities this increase of reserve power is unnecessary. Practically all forms of training develop this condition with the exception of sprint events not entailing continued effort. Under this heading of sprint events we would include ordinary college weight events, jumping, vaulting, hurdles, sprints up to 220, and baseball. Under the consideration of various sports a little later, we will endeavor to show the relative frequency of the occurrence of cardiac hypertrophy for the several events and in combinations of these.

The factors in the demand for increased cardiac power with physical exertion are those of increased peripheral resistance, systemic and pulmonary, increased venous pressure and increased diastolic dilatation.

On the other hand, it is hard to conceive of a demand as being within the range of normal, which exceeds the limit of safety of thirteen-fold. However, until it can be proven that such hypertrophy from physical training is developed in quantity at the expense of the quality of the individual myocardial fibers, we must depend on the functional capacity of the heart as a criterion for the judgment of its integrity. Certain disadvantages, immediate and ultimate, attend this condition. Hasenfeld and Romberg have found experimentally that the hypertrophied heart muscle is more susceptible to fatty degeneration. From our own observations the hypertrophied heart is more susceptible to acute dilatation, all of our six cases having occurred in athletes who had developed what some would call physiologic hypertrophy as a result of previous training. Our experience has borne out that of Barach, Kienbock, Beck and Selig, all of whom report disturbances of rhythm much less frequently than valvular insufficiency in these athletes. Shumacker and Middleton in a study of the forty-six university athletes were able to group the men under certain fairly well-defined heads. (1) Three athletes with "normal" hearts with unimpaired functional capacity; (2) Ten with dilated and hypertrophied hearts with slow pulse rate and good compensation, occasionally showing arrhythmia or murmur on exertion—this group included practically all the "big" athletes; (3) Twelve with dilated and hypertrophied hearts and a marked reaction in cardiac activity to the stimulus of slight exertion, the irritable group, whose number is twice as great among athletes with numerous training periods in their records as it is in those with few periods of training; (4) Twelve with dilatation and hypertrophy with murmurs before and after exercise, a relatively high pulse rate, usually much increased by exercise; (5) Two with hearts convalescent from acute dilatation; (6) A group of seven athletes showing cardiac lesions several years after ceasing athletic training. There was a total of ten cases of arrhythmia in the athletes studied.

Under the consideration of cardiac hypertrophy we must study the ultimate results or effects. All statistical data gathered without a study of the functional capacity of the cardio-vascular system is futile from a scientific aspect, and much of the extensive work on this basis has relied on the rather unsafe but popular personal experience method. From the pathologic standpoint the muscle which has hypertrophied to meet unusual demands, undergoes when these are removed retrograde metamorphosis. As has been cited before, experimentally the hypertrophied myocardium is more susceptible to fatty degeneration than is the normal heart muscle. Aside from this, clinical evidence bears out the assertion that in the heart muscle as well as in the skeletal muscle cessation of activity institutes fatty and fibrous infiltration and fatty degeneration. The surgeon-general of the navy, Brooks and others, following the physical condition of athletes in years subsequent to the cessation of physical activities, report a great preponderance of cardiac lesions among this group as compared with the non-athletic type. At the same time Brooks reports that the health plane is decidedly lower in ex-college athletes than in the regiment at large.

In a consideration of the effects of the various sports on the heart, we have studied for this report the records of the "W" men alone, with the exception of the crew, where in addition, we have formed a table of all men participating. This limitation narrows the scope of our present study, but nevertheless leaves a fair basis for the judgment of the cardiac effects in men actually competing in the various events. While it might be argued that the members of this group undergoing the actual effort of contest would be the extreme of their type, our observation, probably borne out by your own experience, leads us to the belief that frequently the members of this chosen group are "survivals of the fittest," and of a better physical type than their fellows.

We have grouped those men competing or winning their insignia in only one sport under their particular event, while those entering several sports are grouped separately. Eight men won their letter in basket ball, and all of these had hearts of normal functional capacity on entrance; two men (25 per cent) developed moderate cardiac hypertrophy during their training. In baseball the thirty-one men entering the sport were pronounced normal, and three of the group (9 per cent) showed cardiac hypertrophy without functional disturbance when last examined; a fourth showed mitral endocarditis, the result of an intercurrent infection. Of the thirty-one "W" football men one started his 'varsity training with hypertrophy and nineteen others (63 per cent) showed this condition without functional disturbance on later examinations. In a recent study on all men completing the football training period, forty out of forty-five

showed appreciable cardiac enlargement—the majority of a very moderate degree. The track events have been divided into two groups; the first including sprints, weights and field events, included thirteen individuals without cardiac changes on entrance to the sport, only one of whom (7 per cent) developed an enlarged area of cardiac dullness; the second, distances of 440 yards and over, in which twenty-six men won their "W's" two with enlarged hearts at onset and eighteen had cardiac hypertrophy before the cessation of training, that is sixteen, 66 per cent, of the remaining twenty-four, developed the condition. Of this number three were forced to drop out of the sport on account of subacute cardiac dilatation, three more developed extreme acute cardiac dilatation in races, a seventh man was forced to give up his training on account of circulatory distress, and still another displayed marked hepatic congestion after a two-mile run. In a word, eight men, 30 per cent, of those winning their letter in races of four-forty and over, were compelled to stop training on account of serious cardiovascular or circulatory disturbances. Three men played on both 'varsity football and basket ball teams, two of whom developed hypertrophy of rather extreme degree through their efforts. But one won his honors in football and wrestling, developing hypertrophy in the course of his efforts. Another individual won his letter in football, wrestling and crew, moderate hypertrophy being developed. Ten athletes did track work in addition to their football; all but two (80 per cent) developed cardiac enlargement. The combinations, football and swimming, football, basket ball and track each attracted one man, who developed cardiac hypertrophy during training. Two men developed hypertrophy from football and baseball training, one of whom died from acute cardiac dilatation two years later in the course of typhoid fever. One individual taking part in football, baseball and crew developed subacute cardiac dilatation during crew training. Three men undertook the rigorous combination of football and crew work. In this group hypertrophy was quite extreme and two out of three were affected. No functional disturbance, however, was noted.

TABLE I.

FRESHMAN CREWS—1911 TO 1913, INCLUSIVE

Class	Total	Records	Cardiac Hypertrophy		Dilatation	Duplication in varsity list.		Subsequent Changes in Men continuing rowing after Freshman Year (Unrecorded under data for year)	
			Before	After		Later vars.	candidates	Hypertrophy	Dilatation
					Numeral Men			Total	Numeral Men
1914	34	31	2	10	6	0	6	5	2
1915	14	14	2	8	6	0	10	0	0
1916	11	11	2	10	7	2 boats	7	1	1
Total.....	59	56	6	28	19	0	23		

(Differ-ent Indi-viduals)

VARSITY CREWS—1911 TO 1914, INCLUSIVE

Crew Year	Total	Records	Cardiac Hypertrophy		Dilatation	Subsequent Changes in Men in Succeeding Rowing Seasons.* (Not recorded with data of year)		Previous Changes Noted	
			Before	After		Hypertrophy	Dilatation	Hypertrophy	Dilatation
						Total	Total	Total	Total
						W. Men	W. Men	W. Men	W. Men
1911	26	26	1	6	5	0	3	2	
1912	10	10	4	9	7	1	2	4	4
1913	14	14	10	13	11	0	1	10	10
1914	21	21	15	15†	7	0	1	15	7
Total.....	71	71	30	43†	30				

*NOTE.—These additional data are so placed as to show at a glance the ultimate changes of the crews of each year by the addition of these figures to those of the year. For example, taking the 1914 crew (freshmen): at end of freshman season 10 men of squad (34), 6 of these numeral men, had hypertrophy; on continuance of rowing 5 more of squad, 2 of them numeral men in 1914, making total of 15 of 1914 squad and 8 of the numeral men, developed hypertrophy.

Total Indiv. 56

Total W. Men 23

Total 71

Total 71

Total 71

Total 71

Total 71

Total 71

For the crew men a complete list has been compiled in Table I. Twenty-three individuals won their "W" in this sport from 1911 to 1914, inclusive; of this number, four received honors in other major sports, and an actual total of three, 16 per cent, of the remaining nineteen had hypertrophy before the onset of crew training. Thirteen additional men developed hypertrophy during their crew work. Of the "W" men engaged in crew alone, two developed acute dilatation either during training or immediately following this period, one of these developing an endocarditis. A freshman numeral man, training for varsity, had acute cardiac dilatation, and four men on the squad, not engaged in other sports, had subacute dilatation during their training period.

A table (II) of men winning their insignia in only one sport, renders the relative comparison of the cardiac effects of the individual sport more evident.

TABLE II.
ATHLETES WINNING THEIR INSIGNIA IN ONE SPORT

Event	Total	Hypertrophy at preliminary examination		Hypertrophy developed After training		Marked functional disturbances	
		No.	%	No.	%	No.	%
Basket ball.....	8	0	0	2	25	0	0
Baseball.....	31	0	0	3	9	0	0
Football.....	31	1	3	19	63	0	0
Sprints, weights, hurdles, and field events.....	13	0	0	1	7	0	0
Distances of 440 yards and over.....	26	2	8	16	66	8	30
Crew.....	19	3	16	13	81	2	10

In drawing deductions from the tables and from our observation, one point must be firmly kept in mind. We do not deem cardiac hypertrophy the measure of harm in any sport, but rather the functional changes noted. To us the significance of cardiac hypertrophy has not yet been definitely determined. Its pathologic bearing is strongly suggested by the predisposition of hypertrophied hearts to acute and subacute dilatation as shown by our record. The observations of clinicians point to the instability of the hypertrophied heart muscle during later years and during acute infectious diseases. Many pathologists question the possibility of a physiological cardiac hypertrophy in an adult. The most important question is that of functional circulatory capacity. A glance at Table II will show all of the functional disturbances noted have occurred in those taking part in endurance events. Cardiac hypertrophy developed in many of those taking part in basket ball and football without functional derangement becoming evident. Intelligent and careful methods of training may perhaps explain the absence of serious results in these strenuous games. Particularly is this true of basket ball,

a notoriously severe continued effort. Our observations lead us to believe that the endurance events, distance races and rowing are especially liable to develop functional cardiac weakness. These sports vary in several ways, however. Distance men, running freely with little restriction as to form, develop only moderate degrees of cardiac enlargement, but show myocardial and functional disturbances out of proportion to the morphologic changes, from a fatigue product toxemia. In crew work, with the constant effort to maintain form, more muscles are contracted than are absolutely required and an added burden of increased peripheral resistance is put on the heart. At the same time, the products of fatigue are having their toxic action on the vital structure of the heart.

Summary.

1. Cardiac hypertrophy is the usual result of athletic training in all events, aside from spurts, carried over a prolonged period of training.

2. Cardiac dilatation occurs much more frequently in athletes than in non-athletes. Of the various sports, endurance events contribute practically all the cases of this condition. Rowing races and long-distance runs are the chief offenders.

3. The problem of the significance of cardiac hypertrophy is as yet unsolved though there is evidence that while hypertrophy may increase the power of the heart, it lowers its resistance.

4. There seems to be good evidence that the "athletic heart" has a lessened resistance to infectious diseases. Especial care should therefore be taken to guard against putting a strain on the heart in case of even mild, infectious diseases such as "colds."

We desire to express our appreciation to the members of the faculties of clinical medicine and physical education in the University of Wisconsin for their hearty coöperation in this study.

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PHYSICAL EXAMINATIONS AND CHICAGO FRESHMEN.

D. B. REED, M. D., UNIVERSITY OF CHICAGO, CHICAGO, ILL.

During the year of 1911-1912 there was in operation at the University of Chicago a system of unrestricted election of courses in physical education. A man was required to engage in some one of the activities offered each of his first ten quarters of residence but he might take swimming for the entire time if he wished. In the autumn of that year there were 350 men taking swimming and but thirty-eight men in the two elementary gymnastic classes.

During that year the appointments for physical examinations were made by means of a blank book placed outside of the office door in which the men who should be examined under the requirement were to sign their names and indicate the hours which they chose. Some of the men who entered in the autumn of that year were never examined, and such examinations as were made were not completed until January.

About the middle of December a freshman came to the office, complaining of persistent headaches. An examination, physical and laboratory, showed that he was suffering from a severe case of nephritis which probably had existed for several months at least and yet we had never examined him and he had been playing basket ball under our supervision for two months. If he had been suffering from a communicable disease he might equally well have escaped observation for three or six months.

During the same year a number of seniors were found to be taking swimming and said that they had been doing so during all of their ten quarters, although their posture was very poor, their ability to handle their bodies slight and their muscular development not symmetrical and markedly deficient. In order to do something in the way of correcting postural defects, to give the men a more symmetrical development, to gain for them some familiarity with various forms of physical activity and to give them a basis for intelligent election of courses during succeeding years a general, elementary course was established for freshmen which consists of soccer, volley ball and distance running out of doors during the good weather of the autumn; calisthenics, apparatus work, games, indoor track events, dancing and basket ball through the winter, and swimming in the spring. It was felt to be educationally illogical to demand that all fresh-

men take this course regardless of their previous training or physical attainments and we therefore determined to try to excuse from this prescribed course the men who had already gained a considerable degree of physical efficiency.

In the autumn of 1912 we began to use the present system of physical examinations which is designed to meet the three needs brought out by the observations noted above; first, to prevent the individual from undertaking work, either physical or mental, for which he is unfitted; second, to guard the university community against communicable disease; and third, to decide which men might be excused from the prescribed course and to aid them in their election.

In carrying out such a plan, early completion of the examinations is imperative. We have, therefore, sacrificed what seemed to us the least important part of the customary examination in order more quickly to accomplish what seemed more important. We make no measurements of muscle either as to size or strength, but we do finish the examination of all entering undergraduates during the first two weeks of each quarter and before they enter upon any physical activity under our supervision.

Certain details of the management of the work may be of interest. When the entering undergraduates meet their deans on the first day of the quarter to arrange their courses they are sent to the gymnasium to make appointments for physical examinations. When they appear at the office each is given an appointment and a memorandum of it, and also a history blank with instructions to fill it out and bring it when he comes for examination. He is also told that his classes will not begin for two weeks and that inasmuch as the examination is his only obligation to the department during that time, failure to keep his appointment will count as four cuts against him—the total number of cuts which he is allowed without penalty. Six men per hour are scheduled for eight and a half hours a day. Since two men, one medical and one non-medical, assist in the examination of each man, one complete examination consumes twenty minutes.

The examination is similar to what is in general use in colleges except that muscular measurements are omitted. The urine is examined in every case and the feces in cases in which a typhoid history is given. Especial emphasis is laid on inspection and on the examination of eyes, nose and throat. Each man is given a booklet in which the causes, prevention and cure of the more common postural defects are discussed, exercises for correction are given and illustrated, and some general suggestions as to personal hygiene made. Each man's defects are marked in the booklet which is given him.

The men whose condition makes it unwise for them to undertake vigorous work are asked to report for a second examination at the end of the two weeks and are then given special work

adapted to their possibilities under the direct supervision of the office. They report for reexamination every week.

The men whose examinations are particularly satisfactory, that is, those whose posture is excellent, who are well and uniformly developed and who are organically strong, are asked to return at the end of the two weeks for practical floor tests of their ability to use their bodies. These tests are as follows: a sprint of one lap around the track (thirteen laps to the mile); high jump, with heights of 3 feet 10 inches, 4 feet 2 inches and 4 feet 6 inches; bar vault with heights of 4 feet, 4 feet 6 inches and 5 feet; a fairly complicated parallel bar exercise and a balance exercise which consists in walking across the narrow edge of a boom. A man is graded as passing these tests if he does well at all of them or well at four and fairly well at the fifth. If he is very poor at one or but fairly good at two he fails to pass. The men who pass these tests are allowed to elect their courses.

The entering undergraduates who make no appointments or who fail to keep them are reported to their deans who do not permit them to attend classes until they receive their examinations, a method which quickly brings in the few stragglers. Entering graduate students are urged, but not required, to have examinations and about twenty of them appear in each autumn quarter. They, however, are required to take no work in the department.

Any dean may send a list of the new men under his charge and receive from the gymnasium office a report giving the physical findings in each case which seem likely to be of value, and some of the deans regularly send such lists. Men who need the attention of a specialist are referred to one and he sends us a statement of his findings which is attached to the man's examination card. We have no means of insisting upon a man's receiving such attention.

In the three autumn quarters in which this system has been in use we have found thirty-nine men who were unfit to take the regular work on account of hernia, nephritis, defective hearts or thyroid hypertrophies and twenty-four men with communicable diseases such that they ought not to be allowed to mingle freely with the rest of the students.

In these three quarters 1072 men have been examined, of whom 793 were freshmen. One hundred twenty-one of these freshmen or 15 per cent were eligible for the floor tests and sixty-one or 7.5 per cent passed them. It is interesting to note that of these sixty-one all but seven had been prepared in both gymnasium and athletics, three had had gymnasium only and four athletics only. The method has seemed of sufficient value so that it has now been adopted (except the floor tests) for the women and the children of the university elementary and high

schools. Last autumn the following numbers were examined during the first two weeks:

421	men.
419	women.
288	high school boys.
194	high school girls.
236	elementary school boys and girls.
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1558	

REPORTS OF LOCAL SOCIETIES, 1914.

BALTIMORE, MD.

Officers.

President,	William Burdick, M. D.
Vice President,	Alphine Parker.
Treasurer,	Mary A. Foley.
Secretary,	Katherine H. Willis.
Representative to National Council,	William Burdick, M. D.
Executive Committee,	Lillian B. Otto, John Loret and Theodore Kistler.

Meetings.

No report.

Members.

Fourteen National members.

WILLIAM BURDICK, *President.*

BATTLE CREEK, MICH.

Officers.

President,	William W. Hastings, Ph. D.
Secretary,	L. A. Babcock.

Meetings.

June.—Speaker, William W. Hastings, Ph. D., Battle Creek, Mich. Subject, "The Physical and Mental Perfection Contests." Speaker, Rev. Edward A. Fredenhagen, general superintendent, Society of the Friendless, Kansas City, Mo. Subject, "Society of the Friendless."

July.—Two lectures by Professor Elmer Berry, International Y. M. C. A. College, Springfield, Mass. Subjects: "Metabolism, Exercise and Low and High Protein Diet," "Sweat."

Lecture by R. E. Hawley, Acting Director of Extended Use of Public Schools, Boston, Mass. Subject, "Extended Use of Public Schools."

August.—Lecture by Dr. J. C. Elsom, University of Wisconsin, Madison, Wis. Subject, "Play."

Two lectures by Dr. J. H. Kellogg, superintendent of Battle Creek Sanitarium and president of Normal School of Physical Education, Battle Creek, Mich. Subjects: "Race Betterment," "Metabolism."

Members.

Fifty-three members.

W. W. HASTINGS, PH. D., *President.*

BUFFALO, N. Y.*Meetings.*

December.—Meeting of the Executive Committee to arrange for Miss Bancroft's lecture.

Members.

Twenty-five members, eight National members.

ALTA J. WIGGINS, *Secretary*.

CEDAR FALLS, IOWA.*Officers.*

Secretary and Treasurer,

Margaret Nisbet.

Meetings.

One meeting held every Friday of the fall session of school with no particular or planned program.

Members.

Thirty-four members, eight National members.

MARGARET NISBET, *Secretary*.

CENTRAL ILLINOIS.

The Central Illinois Physical Training Teachers' Association has not met since April.

GERTRUDE E. MOULTON, *Secretary*.

CINCINNATI, OHIO.*Officers.*

President,

Carl Ziegler, M. D.

Vice President,

R. Redmond.

Secretary and Treasurer,

H. B. Lewis.

Representative to Council,

Carl Ziegler, M. D.

Program Committee, Chairman, A. Brodbeck, Hazel Orr.

Meetings.

January.—At this meeting plans were perfected to have the senior class of the Indianapolis School of Physical Training come to Cincinnati and give a demonstration of marching, tactics, calisthenics, gymnastics, dancing, etc.

A very interesting talk was given by Mr. August Eckel on the "Leipzig Turnfest." Mr. Eckel visited Germany and was an eyewitness of the events of that great turnfest.

A demonstration of gymnastic dancing was given by Mr. A. Picker and Miss Sophie Eid.

March.—On Saturday afternoon, March 21, the senior class of the Indianapolis School of Physical Training gave a very creditable exhibition of their work in a local high school gymnasium. This was also an open meeting and was attended by some 500 people; quite a few of the public school officials attended same.

September.—Those who attended the various summer schools gave impressions of the work and endeavored to keep those who were not fortunate enough to attend the schools, posted on the new phases of physical training.

November.—Dr. Martin Fisher, of the University of Cincinnati, gave an excellent talk on "Sex Hygiene." This meeting was open to school teachers and principals and was attended by quite a large number of people.

From time to time various other kindred subjects of physical training were discussed informally and an earnest effort was made throughout the year to have all become members of the National Physical Education Association.

Members.

Thirty-five members, ten National members.

H. B. LEWIS, *Secretary*.

LOS ANGELES, CAL.

No report.

MINNESOTA.

Officers.

President,
Vice President,
Secretary,
Treasurer,

Dr. J. Anna Norris.
F. A. Henkel.
Allen Miller.
Ira A. Jones.

Meetings.

No report.

Members.

Twenty-five National members.

IRA A. JONES, *Secretary*.

NEW HAVEN, CONN.*Officers.*

President,	Dr. E. H. Arnold.
Vice President,	Dr. J. W. Seaver.
Secretary and Treasurer,	Dr. J. N. Boynton.
Representative to Council,	Dr. E. H. Arnold.

Meetings.

No formal meetings held during the year.

FRANCES N. BOYNTON, *Secretary.*

NEWARK, N. J.*Officers.*

President,	Randall D. Warden.
Vice President,	Mathias Macherey.
Treasurer,	George Siekel.
Secretary,	Robert Latimer.
Executive Committee, J. Norman Richards, E. Fred Moller, Mathias Macherey, Mae A. Dolan.	

Meetings.

January 9.—Subject, "Basket Ball Coaching," Guido Cavallo. Modern school dancing, led by Ernest H. Seibert.

February 9.—Subject, "Some Phases of Physical Training in Connection with Settlement Work," Alice Curtis.

March 10.—Address, "The New Basket Ball Rules," George T. Hepbron. Demonstration of a wand drill by Mr. Siekel.

April 8.—Address, "The Annual Convention of the American Physical Education Association held at St. Louis," Randall D. Warden.

May 10.—Subject, "Public Baths and Playgrounds, Here and Abroad," Leonard Mason.

June 12.—Annual banquet at *The Washington*. Address, "The Physical Education Department of Newark," Mr. David B. Corson, Assistant Superintendent of Schools, Newark, N. J.

September 30.—Annual election of officers.

October 9.—Subject, "The Value of Fresh Air," Ernest Eaton.

November 9.—Subject, "Principle Underlying the New Course in the Elementary and High Schools of the City of New York," Miss Josephine Beiderhase.

December 7.—Joint meeting with Y. M. C. A. physical directors of New Jersey. Subject, "Is Enough Attention Paid to Formal

Work in the Y. M. C. A. Gymnasiums?" George J. Fisher, M. D.
Open discussion on important topics conducted by Doctor Fisher.

Members.

Fifty-six members, thirty-four National members.

ROBERT L. LATIMER, *Secretary.*

NEW YORK AND VICINITY.

Officers.

President,	Thomas D. Wood, M. D.
First Vice President,	George E. Cooley.
Second Vice President.	John F. Ellert.
Secretary-Treasurer,	Helen McKinstry.
Representative at the Council.	Thomas D. Wood, M. D.
Executive Committee, with officers,	John A. Davis, Jesse
	F. Williams, Bessie K. Marsh, Carrie Van R.
	Ashcroft.

Meetings.

Eight regular monthly meetings of the society—with an average attendance of ninety—were held as follows:

January.—Subject, "The Relation of Habits of Posture to Health," Joel A. Goldthwait, M. D.

February.—Subject, "The Influence of Athletics upon Civilization in the Philippines," illustrated with stereopticon. Paul Monroe, Ph. D.

March.—Subject, "New Features of the Physical Education Work of the Y. W. C. A. and Y. M. C. A.," Anna L. Brown, M. D., and George J. Fisher, M. D.

April.—Subject, "Up-to-date Methods in Physical Education for College Men," Joseph E. Raycroft, M. D.

May.—Subject, "Some Educational and Social Values of Summer Camps," George E. Johnson.

October.—Subject, "The Need for Festival Activities in the Schools," illustrated with stereopticon, Mary Porter Beegle.

November.—Subject, "The Principles of Secondary Education as applied to Physical Education in the High Schools." Address by Romiett Stevens, Ph. D. Demonstration by Carrie Van R. Ashcroft, M. A., with class of girls from the Julia Richmond High School.

December.—Subject, "Dance-Gymnastique," Miss Marguerite Newman. Demonstration by Miss Newman.

Members.

Total membership, January, 1914.....	253
Resigned and removed during the year.....	30
Dropped for non-payment of dues.....	13
New members admitted during year.....	58
Total membership, December 31, 1914.....	267
Members not belonging to National Society.....	26

HELEN MCKINSTRY, *Secretary.*

PHILADELPHIA, PA.*Officers.*

President,	R. Tait McKenzie, M. D.
Vice President,	William A. Stecher.
Treasurer,	Margaret Remington.
Secretary,	Evaline Young.
Council,	Isaac Porter, Anna Branson, Ethel Rees.
Representative to the Council,	Dr. C. E. Ehinger.

Meetings.

Average attendance 59.

The local society held a joint meeting with the departments of physical education of the higher schools of Philadelphia at the University of Pennsylvania high school, 15th and Wallace streets.

Symposium.—“The Administration of the Recreations of the City,” James Hiatt, Secretary Public Education Society.

Discussion.—William A. Stecher, Otto Mallary.

Paper.—“What Time and Equipment should be given to Physical Education in a City High School?” Elmira Lodor.

Marion Hallett of New York City gave a demonstration and lecture in the Central Y. M. C. A., 1421 Arch Street, on “Social Dancing.” At the close of the lecture Miss Hallett taught several of the new social dances to members of the society.

In May the society accepted the invitation of Mr. Placido de Montoliu to a demonstration of the Dalcroze method. In the gymnasium of Bryn Mawr College about thirty little children illustrated the method of work.

Under the auspices of the Philadelphia Physical Education Society, Mrs. Mary Perry King of New York City presented in November, at the Little Theater, a program of “Ballad Dancing” (the oldest and newest combination of poetry-music and motion). Mrs. King was assisted by three dancers, a songster and a violinist.

In December the society held an informal tea at the home of the president, Dr. R. Tait McKenzie.

Members.

Sixty-two members, fifty-one National members.

EVALINE YOUNG, *Secretary.*

PORTLAND, ORE.

Officers.

President,	P. W. Lee.
Vice President,	W. L. Hayward.
Secretary-Treasurer,	Alberta J. Cory.
Representative to National Council,	A. M. Grilley.

Meetings.

Four meetings have been held during 1914. At each meeting forty-five minutes were devoted to practical work in the gymnasium, directed by the different members in turn. The practical work included games, folk dancing, Indian clubs and apparatus work.

At the December meeting, Professor Alderman, superintendent of the Portland schools, gave an address on "What the Schools here are Doing and the Help that can be given by the Oregon Physical Education Association."

Members.

Ten members, ten National members.

ALBERTA J. CORY, *Secretary.*

ST. LOUIS, MO.

Meetings.

The St. Louis Physical Education Society met twice during the year 1914. These meetings, occurring before and after the convention of the National Association held in St. Louis, were for the purpose of conducting business relative to said convention. Numerous meetings of special committees (comprising the entire membership of the local society) were held during the year. At the last regular meeting plans for 1915 were discussed with the decision to devote the time of the regular meetings of 1915 to a study of "The Relation of the Work of the Psycho-Educational Clinic to the Field of Physical Training."

Members.

Thirty-one members, seventeen National members.

ETHEL R. WEEDEN, *Secretary.*

SPRINGFIELD, MASS.*Officers.*

President,	Dr. J. H. McCurdy.
Vice President,	Elmer Berry.
Secretary-Treasurer,	G. B. Affleck.
Representative to the National Council.	G. B. Affleck.

Meetings.

During the year sixteen meetings have been held with leaders and topics as follows:

Prof. F. C. Fette, Wellesley College, "Public Health and Physical Education"; Dr. John Brown, International Committee Y. M. C. A., "Physical Education for Rural Communities"; W. H. Ball, International Committee Y. M. C. A., "Mistakes Made in Association Buildings"; Dr. George L. Meylan, Columbia University, "Heart Examinations"; H. S. DeGroot, "An Anthropometric Study of Freshmen"; F. W. Dickens, "Gymnastics of the Voice"; F. G. Eadie, "Track and Field Athletics for the Playground"; O. S. Ellis, "Playground Athletic Administration"; G. W. Garniss, "Physical Department Athletic Organization and Administration"; E. K. Hickox, "Comfortable Air in the Gymnasium"; J. R. Irwin, "Exercise in Relation to Nerve Reaction"; R. F. Jenney, "Heart Rate in Relation to Adolescence"; R. H. McLean, "Physical Education in Secondary and Normal Schools of United States"; W. D. Mead, "Control of Athletics in the High Schools"; H. A. Mills, "A Study of the Humidity of a Private Residence"; J. W. Payne, "Effects of Tobacco Smoking on the Circulation"; E. A. Pritchard, "Influence of Swimming on Weight and Temperature"; J. L. Rothacher, "Anthropometric Measurements of Juniors"; Anthony Sannella, "Relation of Clothing to Loss of Weight"; Salvatore Sannella, "Agencies Working for Public Hygiene"; Frederick Schultz, "Blood Pressure in Relation to Swimming"; A. A. Smith, "Contribution of Dio Lewis to Physical Education"; K. E. Smullin, "Blood Pressure and Physical Efficiency"; W. P. Hubert VanBlijenburgh, The Hague, Holland, "A Critical Study of Swedish Gymnastics"; L. B. Vogt, "Studies in Body Weight."

Members.

Forty-nine paid-up.

G. B. AFFLECK, *Secretary.*

SYRACUSE, N. Y.

Officers.

President,	L. P. Washburn.
Vice President,	Katherine Sibley.
Secretary-Treasurer,	Fred C. Belmer.
Executive Committee,	Mary Butler, D. L. Dunlap.

Meetings.

February 18.—"Efficiency Tests" were discussed, followed by a business meeting.

April 19.—This meeting was opened with work by the German Turners. A report of the National Convention and a business meeting.

October 31.—Program: Swedish work by Miss Sibley; wand drill by Mr. Belmer; game by Miss Young; gymnastic dance by Dr. Dunlap; German exercises by Miss Button; calisthenic drill by Mr. Washburn; folk dance by Miss Martin. A talk by Dr. Coons on "Flat Feet and Broken Arches." Later a business meeting.

December 12.—Opened by continued work by Miss Butler; dumb-bell drill by Mr. Doane; game by Miss Sibley; dance by Miss Shaw, and swimming "How to Teach Beginners" by Mrs. Madison. A talk on "Care of the Swimming Pool" by Doctor Mitchell.

Members.

Twenty-four members, fourteen National members.

FRED C. BELMER, *Secretary.*

UTAH.

Meetings.

In January Joseph Jensen, Ph. D., Professor of Psychology at the University of Utah, gave a very instructive address on "Motor Efficiency."

In February Dr. C. C. Snyder, Health Commissioner for Salt Lake County, discussed "Factors for Health."

In June the meeting was a memorial for the president of the society, Prof. Jakob Bolin, of the University of Utah. Talks were made by Vice President Stewart, Prof. Maud May Babcock, Prof. Fred Bennion, William E. Day, and others. Letters were also read from Dr. W. G. Anderson of Yale and Dr. Seaver of New Haven.

WESTERN PENNSYLVANIA.

No report.

WISCONSIN.*Officers.*

President,	George Wittich.
Vice President,	Emmet Angel.
Secretary-Treasurer,	Edith R. Dunham.
Executive Committee,	Miss Broman, Mr. Goos.
Representative to National Council,	George W. Ehler.

Meetings.

February 6.—Green Bay at the Howe School. Program: "Playground Games," Emmett Angel; "Class Room Exercises," George Wittich; discussion by others.

June 23.—Milwaukee. Mr. Wittich gave a very interesting report of the meeting of the National Association of Physical Education held in St. Louis last April.

October 3.—Parlor, German-English Academy. Attendance sixteen. It was moved and seconded that invitations to attend the November meeting be sent to the members of the Milwaukee County Medical Society, high school principals throughout the state and to the members of the Milwaukee school board. The question arose as to the advisability of the Wisconsin Society severing its connection with the National Physical Education Association. The decision to be made at the November meeting.

Papers were read by Walter Wittich and by Hans Goeltz. The subject under discussion was "The Place of Summer Schools in the Training of the Instructor of Physical Education."

November 6.—Gymnasium of German-English Academy. Papers were read on "The Value of High School Boys' Competitive Athletics—from the Viewpoint of the Education" by George Chamberlain; "From the Viewpoint of the Physician" by William I. Middleton, M. D.; "From the Viewpoint of the University Coach" by Thomas E. Jones.

The last paper was read and supplemented by Dr. Meanwell.

A business meeting followed the discussion of these papers.

Moved and seconded that Mr. Angell's recommendation to sever our connection with the National Physical Education Association and the matter of dues for Wisconsin Society be laid on the table until after the Council meeting in December. This motion was made by Mr. Hetherington and seconded by Mr. Ehler. The secretary was instructed to send circular letters to all members in regard to a change of date for the election of officers. On motion the meeting was adjourned.

EDITH R. DUNHAM, *Secretary.*

NEWS NOTES.

Members should notify the secretary immediately of any change of address.

BIBLIOGRAPHY OF CIGARETTES AND TOBACCO AND THEIR EFFECTS.

The bulletin prepared by P. Welcher, field secretary of the Anti-Cigarette League of America, 23 West 9th St., New York City, may be secured from the author. This bibliography was prepared at the request of Dr. C. Ward Crampton.

CLARK TEACHERS AGENCY.

This agency has secured Dr. Joseph H. Hill, formerly president of the State Normal School of Kansas, as one of its agents.

ROPE WORK FOR THE PLAYGROUND.

United States Department of Agriculture Farmers Bulletin, Number 638, January 23, 1914, publishes a series of exercises on rope work for use on the farm which would be of real help to the directors of playgrounds and of physical education. The knots are illustrated by splendid photographs.

ORVILLE BREWER TEACHERS AGENCY.

This agency has recently secured Superintendent L. E. Amidon, of Iron Mountain, Mich., as one of its agents. He will take charge of the Brewer Teachers Agency with rooms 1302-5, The Auditorium, Chicago.

The Kansas Physical Education Association has recently organized, with a plan of becoming part of the State Teachers Association. A splendid group of teachers joined as charter members.

The magazine *Teaching*, for December 15, 1914, published by the State Normal School, Emporia, Kan., is devoted to physical education. The articles are chiefly on playground activities.

AMERICAN POSTURE LEAGUE.

The American Posture League, 3 Church St., New York City, has recently published an attractive bulletin telling something of the work of the league. Illustrations are given in the booklet, illustrating some of the bad and good conditions for the school, office, home and public vehicles. Illustrations are also given of the bad features of wearing apparel.

COOK COUNTY AMATEUR ATHLETIC FEDERATION.

This federation has challenged Tokyo, Japan; Shanghai and Tientsin, China; Manila, Philippine Islands; Rio de Janeiro, South America; Calcutta, India; Auckland, New Zealand; Adelaide, Australia; to an all-round athletic contest, consisting of five events. The results of the contests are to be cabled or mailed.

Contestants will be divided into three divisions: grammar school, age fourteen and under; high school, fourteen to eighteen, and seniors, eighteen and over. The events: high jump, shot-put, fence vault, with three standing broad jumps or hop step and jump and potato races. They will use a score chart worked out by G. A. Sells, president of the Cook County Amateur Athletic Federation. This chart is a composite of the Olympic Games, National A. A. U. and National A. L. N. A. records.

UNIVERSITY COURSE IN HEALTH.

A course of study in health and disease for general students is offered by the University of Wisconsin medical school for the second semester. It is designed to cover the more important aspects of personal and public hygiene, emphasizing the sources of infection and the methods of the spread of disease, together with the measures used to control these factors.

The course will in no sense be technical and is intended for all persons who desire a knowledge of the ways and means to promote their own health and that of the community.

The lectures will be given mainly by members of the medical faculty, supplemented by other members of the University faculty and public health experts from outside. The lectures will be open to the public at any and all times. The course will be given for credit to students.

THE THERAPY OF EXERCISE.

The day of shot-gun prescriptions is past, likewise the day of random exercise.

If your case is obstinate don't think you have tried exercise until you are sure it has been done under the careful direction of a physician who has made a special study of the physiology of exercise.

The prescription of exercise must be changed from day to day, according to the condition of the patient on that day as influenced by weather, experiences of the intervening time since the last treatment, such as sleep, digestion, work, mental disturbance, incidents of the day, etc. No more shot-gun exercise prescription.

The man who administers exercise must have the eye, intuition, judgment or what not, to detect the first signs of fatigue, and be instantly guided by these signs. He must differentiate between the real and the false, the overambitious and the lazy, easy-going shirk; hold back the one and drive the other. He must have that something which guides the successful trainer and tells him how much and what kind of work must be done each day to bring his charge to the highest degree of efficiency. This something is a gift, is born, not learned, but enriched and developed by experience, observation and a close study of the individual, together with the results of many cases through years of practice.

These are the things which make for success in the prescription of exercise for men and women who have, for one reason or another, fallen below normal in their physical strength and health. How much more delicate is the problem of training these people than the vigorous, healthy college youth, bubbling over with energy, craving for some athletic feat! How much more important to keep in training for life's work and at the same time lengthen the years of usefulness!

There are a few known things that make for health and full working power and efficiency:

- (1) A good strong circulation to bring a rich supply of food to the tissues to carry off the waste which, if retained in the body, becomes poison products. The proper amount and kind of exercise will develop a strong heart.

- (2) Plenty of oxygen to feed the fire which produces energy and makes combustion complete. Incomplete combustion leaves an irritating ash causing pain and suffering, for example, rheumatism, gout, etc. Exercise brings into use the lung cells and thus enables the blood to take on more oxygen and give up the poison products more readily.

Other energy-producing material, such as is taken into the system by way of the alimentary canal (meaning the food we eat and drink) must be digested and taken up in the blood before it can be converted into energy.

To do this we are again dependent upon the circulation. The more vigorous the circulation the better digestion and greater efficiency. Exercise becomes the important factor in digestion. Again all the functions of the body—circulation, respiration, digestion and elimination—are under the control of the nervous system.

The nerve centers without the control of the will direct every one of these functions, but a sick or a starved man cannot do a full day's work nor can a sick or starved nervous system properly direct the functions of the body. Hence follow indigestion, constipation, headache, fatigue, neurasthenia and all the ills resulting from a sluggish, incomplete elimination or badly acting functions.

The controlling factor in all these things is, again, properly measured and selected exercise.

After we have provided a proper and sufficient nutrition then comes the equal necessity of getting rid of the waste and surplus products. This is done by means of the intestinal canal, kidneys, lungs and, most important, the skin. In order to be perfectly well the skin must be brought into healthy activity at regular intervals, as indicated by a free perspiration. This again is only brought about in a healthy way by exercise, supplemented or assisted by the hot bath of either light or water.

Extracts from a paper on "The Therapy of Exercise," read before the Kings County Medical Society, by Dr. Watson L. Savage.

CORRECTIVE GYMNASTICS.

Most people do not sufficiently realize the inconveniences and, often, the dangers resulting from faulty posture. Faulty positions lead to decreased heart and lung action, and sometimes to a displacement of one or more of the vital organs. Through this the person's vitality is lowered and he becomes more susceptible to all forms of disease. Corrective work, if undertaken seriously, and persisted in by the afflicted person for a certain length of time, will cure most mild cases of deformity and improve the bad ones.

This leaflet has been prepared to call attention to the postural deformities usually found among school children, also to give to parents, teachers and pupils a selection of valuable corrective exercises that can be performed anywhere. No exercises upon special apparatus are, therefore, included in the list.

ROUND SHOULDERS (Kyphosis).

Examination.

When examining a pupil it is necessary to determine the conditions which have brought about this faulty posture. An incorrect sitting position in school or at home is in many cases the cause, while in some it may be a shortening of the pectoral muscles. In other cases, eye weakness may be responsible for the condition. It is important, therefore, that the contributory factors as well as the corrective work be considered, and that the conditions that led to the deformity be removed.

Viewpoints for Corrective Work.

Exercises should be given to increase the flexibility of the thorax, and to secure a better position of the head. The shoulders should be drawn downward and backward, fixing them by their adductors and depressors. This fixation of the shoulders allows

the large pectoral muscles to exert an upward pull upon the ribs, thereby raising the chest. Accompanying this fixation of the shoulders a general straightening of the entire thoracic spine should take place. Great care must be taken to prevent a pushing forward of the head when drawing back the shoulders. The points to be worked for are a "raised chest" and a "straighter upper spine."

A strict progression should be observed in the exercises to be given, and the child *should not be fatigued* by too frequent repetitions. By a gradual increase in the number of repetitions and in the difficulty of the exercise, a faulty posture can be corrected, and a better carriage assured. This improved carriage will induce better respiration and circulation, and consequently better physical and mental health.

Exercises. All movements are to be repeated as often as directed by the teacher in charge.

1. Sitting in a chair, hands placed on the thighs; raise the chest, pulling up the ribs as high as possible. Hold this position for a moment, then relax.

2. Lying frontways (face downward) on a table, bench, hard couch or the floor. Place hands on hips, then raise the head backward, keeping the chin close to the neck.

3. Lying frontways. Place hands on hips, then bend the upper trunk backward (straighten the upper spine). Caution: Avoid bending in the lumbar spine.

4. As 3, bending the arms upward, hands at the shoulders.

5. As 3, placing the hands in rear of head.

6. As 3, raising the arms upward.

N. B.—These exercises, being postural, should be taken on command only (not rhythmically). Ensure a firm contraction of the muscles involved, and observe accurate execution to avoid the production of other faults. Turning of the trunk in standing or sitting is a good supplementary exercise for increasing the flexibility of the trunk.

LATERAL CURVATURE OF THE SPINE (Scoliosis).

Examination.

In this faulty posture the vital organs are compressed and displaced, leading to a weakening of the health, due to the crowding or displacement of the viscera in the thoracic and abdominal cavity. By means of proper exercises the abnormal curve of the spine will be reduced, if not entirely eliminated. In most cases the convexity is toward the left. In this case (left scoliosis) the pupil's left shoulder will be raised and twisted forward, and the right pelvic bone will be more exposed than

the left. As a rule there is a twisting of the thorax to the right. The triangle between the right arm and the body will be larger than is the left. When the pupil bends forward, the curve may be determined by the position of the tips of the spinous processes: and when the pupil is sighted across the back the right side will appear higher than the left.

The causes which produce this malposition may be too high or too low benches in the schoolroom, sitting on one foot, bad lighting when working in school or at home, continually carrying books or other heavy objects on one arm. These causes should be removed first. One leg being shorter than the other may be the cause for scoliosis. A built-up shoe then must be worn on the short leg. Pott's disease, indicated by twitching of the back muscles, may be the cause. In this latter case, also in tubercular affection, no correction by exercises should be attempted, but the case should be given into the hands of a competent orthopedic surgeon.

Viewpoints for Corrective Work.

The most important muscles which will correct this faulty posture must first be strengthened and shortened by repeated strong contractions (this on the side toward the convexity), and the fellows on the opposite side must be stretched in proportion. In nearly all cases of long standing a compensatory curve to the opposite side is found in the lumbar region. As the dorsal curve is eliminated, this compensatory curve often disappears. If not, the exercises must be modified to include this curve.

If the curve is primarily in the lumbar region a short leg usually is the cause.

Creeping exercises are valuable in causing a forcible contraction of the muscles at either side of the spine, thereby causing a vigorous bending toward the desired side. Creeping is excellent also for increasing mobility of the spine. Malpositions that cannot be corrected by simple exercises should always be placed under the care of an orthopedic surgeon.

Exercises (for left scoliosis). Repeat movements as often as directed.

1. Side stride stand with left hand on hip. The right arm is bent to strike, or placed in rear of head, or stretched upward, as a starting position. In this position bend the trunk to the left.

2. Left hand on the curve, right hand on hip, slow marching, forward or backward (press hard).

3. As 2, with the right hand in various starting positions to increase the leverage.

4. Lying on the right side of a table, feet fixed, body over the table's edge to within a few inches of the waist. Place the left

hand on the hip and raise the right arm to strike, or behind the head or upward. In this position bend trunk to the left.

5. Lying as in 4, raise the right arm upward and the left arm sideward. In this position bend the trunk left.

6. Creeping position, bringing the left knee close up to the left shoulder, at the same time stretching the right arm upward and the right leg downward as far as possible.

Note.—The most successful work in the eliminations of malpositions, especially of curvatures, is done by overcorrecting the curve; i.e., bringing about a curve to the opposite side, and then strengthening the holding muscles by giving each side equal work.

INCREASED CURVE OF THE LOWER SPINE (Lordosis).

Examination.

In examining a pupil for an abnormal curve in the "small of the back" the examiner will find an exaggerated pressing back of the hips accompanied usually by a too pronounced pushing forward of the chest. Sometimes there is a swaying back, accompanied by a pushing forward of the hips. The result of this unnatural curve is an abnormal stretching of the posterior muscles (the erector spinæ) manifesting itself in backache. Often there is also a serious displacement of the organs of the abdominal cavity.

Viewpoints for Corrective Work.

Exercises should be selected that help to decrease the abnormal curve in the lumbar spine, and which help to strengthen the muscles whose function it is to hold the spine in its natural position.

Exercises. Repeat as often as directed.

1. Sitting on a chair, bend fore-downward as far as possible, relaxing all the muscles of the back.

2. Lying on the back on the floor, hands at the sides; raise the knees up and backward as far as possible.

3. Hang by the hands from a bar; raise the knees upward as far as possible.

4. Lying on the back, hands on the floor at the sides. Raise the trunk (the hands assisting) and bend it forward, reaching forward with the hands as far as possible.

5. Lying on the back; hands on the floor at the sides. Raise the straight legs upward and backward as far as possible.

6. Lying as in 5, raise the trunk upward and then bend it forward as far as possible.

From Board of Public Education, Philadelphia, Department of Superintendence, Physical Education Division.

BOOK REVIEWS.

PRACTICAL HYGIENE. By Charles Harrington, M. D., and M. W. Richardson, M. D. Lea & Febiger, Philadelphia, 1914. Octavo. 933 pp. Price \$5.

The fifth (1914) edition of this standard text following so closely upon the fourth (1911) edition, is sufficient evidence of its unusual merit. In this latest edition besides the rearrangement of part of the contents there are valuable changes, omissions and additions resulting in a total of seventy-five or more pages of new material. In the chapter on food, the principal additions are lists of the composition of commercial meat extracts, analysis of coffee, milk chocolate, etc., the food value of bread from different kinds of flour, the composition of milk from different breeds of cows and enlarged treatment of such topics as egg preservation, milk analysis, etc.

The chapter on air has some new material on bacteria vs. moulds, on moisture and sanitation, making note of the experiments of Rosenau and Amous, also something additional on the smoke nuisance. Some minor changes are noted in connection with the chemical purification of water.

The treatment of disposal of sewage is considerably revised and enlarged, giving separate consideration to sedimentation and chemical precipitation, besides adding a table of analysis of average sewage.

It is to be regretted that the chapter on habitation—heating, lighting and ventilation should be simply reprinted, ignoring some of the fundamental changes in basic principles, which even in 1911 were being considered and which since that date have received much additional experimental confirmation.

The other most important changes are those in disinfection and disinfectants which note some recent evidence relating to the bactericidal action of ozone. The chapter on personal hygiene is a reprint, but that on the hygiene of occupation is thoroughly revised, much enlarged and well illustrated in accordance with its recently emphasized importance. The section on infection, susceptibility and immunity is considerably revised and enlarged.

In all, the text maintains the exceptionally complete treatment and high standard established by former editions.—G. B. A.

THE STOCK EXCHANGE FROM WITHIN. By William C. Van Antwerp. Doubleday, Page & Co., New York, 1914. 12mo. 459 pp.

The author, who is himself a member of the stock exchange, is evidently entirely familiar with its workings. His arguments and illustrations are well calculated to remove much of the prejudice existing in the popular mind, which naturally hears more concerning the abuses than it does regarding the functions and service of the exchange. Of especial interest is his treatment of speculation—its real place in business, its abuses and legislative attempts at restraint. The question of the relationship between the exchange and the banks is well handled, and the explanation of the crisis of 1907 shows an intimate knowledge of finance. One cannot but feel, however, that through the author's desire to emphasize the "honorable" management of the exchange by "honorable" men, he has possibly been guilty of rendering an enfeebling repetition.—G. B. A.

WINTER CAMPING. By *W. S. Carpenter*. Outing Publishing Co., New York, 1913. 12mo. 164 pp. Price 70 cents.

The author, himself an enthusiastic and experienced camper, chooses the rigors of winter rather than the flies and other disadvantages of summer. He has outlined the fundamentals of this somewhat new, but rapidly increasing form of sport. Perhaps the secret of successful winter camping is the art of keeping warm, upon which point the author offers many suggestions, including equipment of personal clothing, especially footwear. His general proposition is that animal wool or fur is best because of its superior power of retaining air.

Party equipment, packing and transportation, making of shelter and beds, camp fires and camp cooking stoves are all given fair treatment. Special attention is given to snowshoes and skis. Two of the most interesting chapters are on "Hints and Helps," and "Wild Life in Winter."—*G. B. A.*

A MANUAL OF PHYSICAL TRAINING FOR BOYS AND GIRLS. By *William G. Anderson, M. D., and William L. Anderson*. United Society of Christian Endeavor, 1914. 12mo. 145 pp. Price

This text has been prepared by Doctor Anderson of Yale and W. L. Anderson, and is intended for members and officers of Christian Endeavors and other similar church societies. The type of work encouraged is that requiring little apparatus, in fact, it is very strongly athletic. The organization is represented through the competitive idea either in competition against record, in which case stars or other decorations are awarded upon the attainment of certain standards, or through the actual competition of teams or groups, which are indicated by sashes, etc. Some good suggestions are offered with regard to correct standing posture, but one wonders why in directions for enlarging the chest the elevation of the ribs is emphasized to the exclusion of diaphragmatic movements. Many would question also the statement that "cold baths are seldom of value."

The major and most valuable part of the book is made up of instructions and suggestions on the various accepted athletic events. Then follows a list of athletic standards for boys and girls, based on weight classification. Hygiene and first aid are given elementary consideration.

The frequent illustrations throughout the text are well selected and well calculated to add both clarity and interest.—*G. B. A.*

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For information address Secretariat Department

National Board of Young Women's Christian Associations, 600 Lexington Avenue, New York City

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JAMES HUFF McCURDY, M.D., Editor

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THE AMERICAN PHYSICAL EDUCATION ASSOCIATION

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AMERICAN PHYSICAL EDUCATION REVIEW

JAMES HUFF MCCURDY, M. D., *Editor*

Vol. XX. No. 4

APRIL, 1915

Whole No. 113

THE PROFESSIONAL VERSUS THE EDUCATIONAL IN COLLEGE ATHLETICS.*

C. W. SAVAGE, OBERLIN COLLEGE.

The subject which I am to present to-day is not a small one. My treatment in the time allotted, therefore, must of necessity be fragmentary rather than full, suggestive rather than exhaustive. For this reason, lest my viewpoint be obscured and I be misunderstood, I wish to state at the outset that I am an ardent believer in intercollegiate sport in all its various branches; that I have been a 'varsity athlete myself, have coached 'varsity athletic teams, and am still closely connected with intercollegiate athletics. I trust, therefore, that my observations will not be considered as the maunderings of a "musty old high-brow," but rather as the conclusions of an ardent lover of, and believer in, athletic sports.

During the past ten years it has been increasingly borne in upon me that there are two great aspects of our athletic problem—two great tendencies, which I roughly characterize as the professional and the educational. In the early years of college athletics in America, only their recreational, hygienic and social aspects were recognized. In a surprisingly short time, owing to the innate love of sport and the growing intensity of athletic rivalry on the one hand, and to the conservatism and shortsightedness of educators on the other, we find strong student athletic associations flourishing and the entire control of college athletics vested in these associations. These organizations rapidly acquired great power. Young and inexperienced student managers abused this power and made embarrassing mistakes. The resultant bickerings and recriminations became so tiresome that it was rightly conceived that continuity and experience in management would

* Read at the Ninth Annual Convention of the National Collegiate Athletic Association, Chicago, Ill., December 19, 1914.

reduce if not eliminate much misunderstanding and friction. This more efficient management shaped itself into what is now commonly called the graduate managership.

With a business man at the helm, the storms and perils of intercollegiate strife were largely dissipated, and the ship of sport for a time sailed smoother seas. College faculties breathed more easily, believing that the threatening clouds of athletic trouble had been dispelled.

But sports, well managed, grew in popularity both with the students and with the public. The graduate manager was a business man, and with an eye to business he saw that greater gate receipts meant better facilities, more equipment, and the means of attaining better results. Better results to the students, to the alumni, to the graduate manager, and even to the faculty meant more athletic victories. The business man's business grew. The training table, the training quarters, the return of star graduates to help coach, the high-salaried professional coach, magnificent athletic fields and imposing stadia were all made possible by good business methods and by the skill of the graduate managers in exploiting the loyalty of alumni. But the athletic association was not an educational body. The graduate manager was not an educator. He was closer to the alumni than to the faculty. His great enterprise assumed such proportions, and its exactions on the time and thought of the students became so heavy, that scholastic pursuits were considerably interrupted.

Here, with characteristic conservatism, college authorities came forward with a harmless prescription for faculty control—an advisory athletic committee, composed of some members of the faculty with sporting proclivities, a proportion of real sports from the alumni, and a representation of undergraduates. This committee advised the graduate manager and even did more, but the graduate manager still, for the most part, had his own way. The athletic associations have grown into corporations, and now hold property worth millions. Intercollegiate sport has gradually become commercialized and professionalized. The good name of the student athlete has often been smirched by proselyting and subsidizing, and our controversy of amateurism versus professionalism has grown ever more insistent. How can we expect professionalized sport to turn out amateur sportsmen? I believe that college and university presidents and thinking people in general, who have the courage to face the situation squarely, feel with President Wilson that there is real danger of the side show becoming more important than the main tent.

During the last few years slight indications of attempts at readjustment have appeared. The place of play is coming to be recognized. The educational world is in travail, and there is hope that a new athletic era is to be born, an era with an athletic policy

that shall be the legitimate offspring of an educational system ; a child, sane, sensible, sturdy and strong, who will, by the might of his clean ancestry and undoubted parentage, beat down his bullying braggart of a bastard brother until he shall come to recognize his rightful place in the educational family circle.

But possibly the sturdy younger son has already been conceived. In almost any college faculty you will now find a few men of vision who are beginning to preach the doctrine that play has a real and distinctive place in education, and even in higher education. What that place should be, I would like to discuss here, but it is outside the province of this paper. But what of the place of play in education at the present time?

For the sake of analogy, imagine the student body taking a great interest in the work of the Department of Expression and Public Speaking. A number of students form a dramatic association, secure a competent coach, and elect a manager. By patient training, a skilled debating team is developed, several prize orators are produced and a splendid cast of characters is trained to portray a Shakespearean play. Granted that contests for the orators and debaters and a theatrical engagement for the actors could be secured each week without the interruption of college work, will any educator here present advise that it would be good educational policy to schedule regular seasons of seven to ten weeks each year for these young people to travel about the country and appear before public audiences, while at the same time the great mass of the students should receive practically no instruction or training in any form of public expression?

This analogy cannot be pressed too far, yet it is apt enough to afford food for thought.

The facts of the case are that there is little or no justification of the present status of intercollegiate sport as a legitimate interest in an educational system. Some of you will say that it needs no educational justification, but with that position I must disagree. Thanks to the influence of this great association, and to the zealous and indefatigable efforts of the friends of good sport working through local conferences, the conditions surrounding intercollegiate sport have improved tremendously in late years, as far as public performances and external conditions are concerned. But we have not yet gone to the root of the matter. We are industriously pruning and trimming the athletic tree, plucking a leaf here and a diseased blossom there ; but we hesitate to lay the axe to the root. With the great educational and moral principles underlying sport and with the question of amateurism I fear we are making little progress.

Now our difficulties in both these respects are largely due to one and the same cause. Under existing conditions promising young athletes in high schools and academies are rounded up by

alumni scouts or other agencies, they receive inducements of one sort and another, in many cases legitimate and in many other cases such as to prostitute all moral integrity. But whether right or wrong, the athlete is zealously sought after, and that because he is an athlete. If possible he is placed under obligations before reaching college, he is even steered to the proper fitting school of the particular college. He thus enters college with the wrong idea of the relative importance of sport and study. Once in college he lives in an athletic atmosphere that is commercialized and professionalized. He joins the freshman squad and his training is begun. Neither time nor expense is spared to fit him "to deliver." He is promoted to the 'varsity squad. With professional coaches paid enormous salaries for a season's work, with the high-salaried trainer and his retinue, with a famous old grad a thousand miles away summoned by telegraph, expenses paid, to show him how to lengthen his punt a couple of yards, with scouts, who have watched every game of opposing teams throughout the season, returning for the week prior to meeting this or that opponent and coaching how to meet the particular opponent's play, with trips involving three or four days' absence from classes, with a week spent at the seashore or mountains away from the classroom—with all of these things and countless others, what idea of sport is the student to get? Is it sport or is it business, a pastime or a profession? Is it more important than studies or not? That our student athletes carry themselves as well as they do under these circumstances is a tremendous tribute to the stuff of which they are made. That they are able to do anything with their studies is almost inconceivable, yet here again they acquit themselves surprisingly well. But my contention is that the whole program is fundamentally wrong. The whole scheme is professionalized. Efficiency is developed down to the minutest detail. No captain of industry or corporation board of directors could map out a plan of campaign and carry it out with greater efficiency. The coaches and the managers in our great colleges leave no stone unturned that victories may result. Money is poured out like water. The student players are mere pawns, a band of picked men trained and groomed for the day of the contest. That the boys like this sort of thing and that athletic honors are coveted is neither here nor there.

I maintain that it is because of this system that to-day, in spite of multitudinous rules of eligibility, in spite of gentlemen's agreements, in spite of quasi-faculty control, we still have insist-calls for rule revisions, we still have men actually hired to play football on college teams, we still have men competing four and five years, we still have boys lying about their amateur standing, we still have charges made against the morality of intercollegiate sport.

All these things and countless others exist because of the system that has gradually been developed. There is nothing in the history of education to parallel this development. It is best likened to the war policies of Great Britain and Germany, now grappling in a struggle to the death. For a score of years each nation has been trying to surpass the other in preparedness for war. Similarly, since the beginning of intercollegiate football each institution has attempted to get ahead of its rivals in preparedness for the game. Gentlemen, the time for disarmament has come. To my mind our athletic troubles will never grow less, our discussions over the definition of an amateur never cease, until there is a radical readjustment of our athletic system, at least as far as intercollegiate football is concerned. Understand that I am making no charge against football as a game. I believe that our American game of football is the greatest game that the human intellect has ever devised. And let it be clearly understood that I am in no way censuring the special coach, be he graduate or professional. Neither do I blame the athletic associations or their managers. All alike are creatures of the system, and, like Topsy, the system has "just growed." The blame for the situation in the last analysis must rest upon the college authorities. Because of their lack of insight and of foresight we are where we are.

That our great universities will soon change their methods is doubtful. But eventually reformation, if not revolution, must come. At the present time, the trend is almost entirely in the other direction. Coaches who can "deliver the goods" are getting higher and higher salaries. Unsuccessful coaches must go. One bad season is enough. Or the coaching system is at fault and a new one must be tried. You know the ins and outs of the entire situation. But let me ask you a question. Do the presidents or the faculties or the trustees or the regents have anything to say in these matters? Very little. You may say that the educational authorities should have nothing to do with these matters. I maintain that they should have everything to do with them. As long as the students are in an educational institution, educators should direct and control all the educational influences to which they are subjected, and that, too, in such a way that the greatest good to the greatest number may result.

All games and sports in the last analysis have their genesis in the fundamental instinct of play, an instinct almost as powerful and as impelling as the instinct of self-preservation. The biological significance of this all-powerful play impulse is only beginning to be understood. That we as educators should not be content to dillydally with innocuous attempts at repression and control, but rather rouse ourselves to direct and utilize this tremendous force as a real means to education, is my plea.

Although I have already made a sad inroad upon your patience, I cannot close without a word along constructive lines. I have no panacea, no cure-all, to propose. But certain tendencies at least deserve commendation and certain policies can be suggested.

Certainly a readjustment all along the line is necessary, particularly in high schools and academies. Secondary schools are too prone to ape the colleges, but here and there they are showing signs of independence and originality. A high school on the Pacific slope maintains an interscholastic schedule but never sends out the same team to represent it. In the East the splendid Andover plan (of which you are to hear shortly) is certainly greatly to be commended.

In intercollegiate athletics, undoubtedly either schedules should be greatly cut down or different teams should be sent into the different games. In the one or two big games which every college always has on its schedule, surely the best team should represent its institution. But on such great days as these there should be no attempt on the part of the faculty to maintain college appointments. The day should be a holiday for both institutions. The one, both students and faculty, should be the guests of the other. Hospitality both before and after the game should be extended and received. I lay especial emphasis on the aftermath, for I think it would accrue greatly to the education of the victors were they to have an opportunity to learn how to comport themselves considerately and as gentlemen after a victory. The round of such a day of pleasure might fittingly end in a great athletic rally, with both teams present and the student bodies intermingling as friends. It would probably eliminate many of our troubles if gate receipts could be done away with and attendance be by student ticket and by invitation only. There is not the slightest reason why a sane athletic system should not be supported by endowment or by a student athletic fee, and athletics be run on a carefully prepared budget. The sport itself would then be running on a strictly amateur basis, and most of our evils would die a natural death.

The professional coaches would undoubtedly give place to men of faculty standing on the staff of the department of physical education. The practice now quite common in the Middle West of hiring the football coach for the entire year is a step in the right direction, but in too many instances the presence of the coach serves only to increase the stress on football. He is constantly "sizing up" and working with his material for the next season; he has them practice boxing and wrestling through the winter, gives a number of talks on the fine points of the game, and in the spring calls them out for unseasonable and senseless "spring practice." "In the spring the young man's fancy lightly turns to thoughts"—of football? Well, hardly!

Another suggestion would be to schedule intercollegiate meets between departments or classes. If intercollegiate games are good for twenty-five players out of five thousand students, why not for a hundred, or five hundred? Doubtless many other and better suggestions could be made, but enough has been said to serve my purpose.

In my judgment, it is the privilege and duty of every delegate in this convention to go back to his institution and say: "Let us do away with this ineffective scheme of faculty control of athletics, and let us hasten the day of faculty direction and utilization. Let us recognize the value of athletic sports in education and make a real place for them." In other words, the time has come for educational institutions, to incorporate the entire athletic life of the institution, intercollegiate as well as intramural, into their educational program. No longer should we be content with intensive athletics alone, even were they to be conducted in a manner above reproach. Our attention and effort should also be turned to extensive athletics as well, if we are to justify them in the life of students. Even should we claim that play and games afford nothing more than social and hygienic effects (and this I, for one, cannot admit), our athletic methods of to-day are preposterous, even scandalous, and almost entirely indefensible as a legitimate interest in the efficient working program of an educational institution.

"Ranting radicalism," I seem to hear many of you say. Others say, "Even if true, impossible and impracticable." Well, we educators always have been conservative. I will admit that I am taking a long look ahead, but I am emboldened to point the way to-day for two great reasons.

In the first place, we are met to-day in a great city of the Middle West, and I am addressing a body composed largely of progressive western men. You men represent institutions with a future. Unhampered by a load of tradition, set yourselves seriously to this problem, and blaze a new trail. Remember, not everything that has been, or is, is right.

Secondly, this is a material age. Thanks to the wonders of invention and the miracles of modern science, no age and no nation has ever enjoyed the material advantages which we are enjoying to-day; and because of the stoppage of the ordinary channels of trade due to the European conflict, we see in the immediate future new opportunities for our commercial aggrandizement such as the world has never before afforded. But herein lies a tremendous national peril. Easy wealth and industrial prosperity do not make nations great. Our best civilization is already open to the charge of softness. Will not greater prosperity completely enervate and demoralize us?

The nations of Europe are to-day engaging in a titanic

struggle which is transforming men from the easy-going "flanneled fools" of Kipling to prodigies of courage and physical endurance. A moral regeneration is sweeping all Europe. War has this virtue at least. But our nation is the prophet of peace. How are we, at the rising tide of a material prosperity never before dreamed of, to be able to keep our virility? War makes heroes, easy wealth makes molycoddles and worse. Our manhood must possess virility, force, physical courage and endurance if this nation is to endure on the earth. And where so naturally and so well are these qualities engendered as on the athletic field? Therefore, I challenge you, not only for the sake of our national greatness but for the sake of our very existence, to help hasten the day when the participation in athletic sports shall be general, and when every college man shall leave his *alma mater* physically and morally, as well as intellectually, fit.

THE ANDOVER PLAN.*

W. HUSTON LILLARD, PHILLIPS ACADEMY, ANDOVER, MASS.

At the risk of taking you over familiar ground, I am going to review first the situation in American sport which demands some such change in organization as that which we have made at Andover. Doctor Endicott Peabody spoke to your conference last year about the difference between our American ideas of sport and those which prevail in England. It is a blind and foolish patriotism which prevents us from acknowledging frankly that we are a long distance behind the English schools and universities in this respect, and that if we ever catch up with them we shall then cease cheating ourselves out of our birthright. Has not England under war pressure just given us an excellent demonstration of the difference between a "rooter" and a player? The English press spoke out sharply against the forty thousand Manchester rooters who occupied bleachers at a professional soccer game and provided only a corporal's guard of recruits for the army. How different was the response at Oxford and Cambridge. Two-thirds of the Oxford students went at the first summons, and now even the freshmen have put on khaki to "play up" for their country. The colleges are empty. This is an impressive response, a response by men accustomed to the discipline of athletic contests on the rivers and playing fields. These men are not rooters; they are players, who know how to keep their wits about them under exciting conditions,—trained sportsmen, who have learned in many a close match that sheer will power can force a victory after tired muscles have signaled for surrender. English university men are not sitting on the bleachers now; they never learned how to sit on the bleachers at Eton and Magdalen, Rugby and Trinity.

I am not going to say that our American students, accustomed as they are to playing the rôle of organized loafer, would display the inertia of the Manchester soccer fans if given similar conditions. They would not. But it is fair to say that the man who plays the game is making himself a more useful citizen, while the man who sits on the bleachers is developing a bad habit of *simply looking on*.

And I may add that in one respect the situation of the indifferent Manchester spectator is like that of the American student rooter: he has no opportunity to get into the game. Our American universities, like the English factory owners, cannot afford to

* Read at the Ninth Annual Convention of the National Collegiate Athletic Association, Chicago, Ill., December 19, 1914.

provide playing fields, but offer, instead, a seat in the bleachers. It would not be difficult for me to find many of our institutions where a single baseball diamond is offered to hundreds of students. In these same institutions a successful football coach will be retained at almost any sacrifice, but an extra baseball diamond for class games or scrub games is considered a luxury beyond the range of possible financing.

As you know, this is not the attitude of the English universities. If you will visit in October an English university of three thousand students, you will find acres and acres of fields covered with players who are having a good time. Count the teams if you can, and you will find about twenty-five Rugby teams, and the same number of soccer teams, besides field hockey teams and lacrosse teams. Go to the river, and you will discover many oarsmen trying out for the spring races, when there will be a navy of thirty-five eight-oared crews. Everybody is out doing something.

Then return to an American university of the same size, and you will find about one hundred picked men playing football, surrounded by a large body of twenty-nine hundred rooters. To make the situation worse, these American athletes are playing in a spot-light of publicity, especially the demigods of the 'varsity. Every one of the twenty-nine hundred fellow students knows what grade the star quarterback got in his last English quiz. If the right end turns an ankle he is hurried to the infirmary, while the associated press agents proclaim the alarming news to an anxious nation. Perhaps this may seem a bit overstated; but you have seen news of this kind jump from the sporting sheet to headlines on the front page, and from there right into the editorial columns to compete with other subjects of international importance.

It is needless to proceed further in restating these two greatest problems in American sport. We all agree that we must rationalize our intercollegiate athletics, and that we must develop intramural sport. Such is the report of the committee appointed at the last meeting of this association. We must have fewer athletes and more sportsmen.

Certainly it will require many years to make any great progress, and I can assure you that there is no feeling at Andover that all problems have been solved. Our Andover story begins with the year 1897, when Principal Stearns, then instructor in history, first took charge of coaching the baseball team. (Principal Stearns believes that the opportunity of meeting the boys on the playing field is priceless. Although nearly twenty years out of college, he has kept himself in such good trim that he can still pitch nine innings and have at his mercy our best batters.) In 1902 Doctor Page joined our faculty and began a constructive policy of encouraging games between class teams. In 1907 the

football coaching was turned over to a member of the faculty; and in 1912 the same move was made with the track coaching, the former trainer being retained as an assistant. This elimination of the outside coach is mentioned first because it is a necessary preliminary to any change in policy which confesses any other purpose than the winning of that epoch-making victory in the final game of the season.

In the spring of 1911 it was decided that certain improvements could be made in the organization of our sports. There was too much attention being paid to the 'varsity and too many boys were on the bleachers. A survey of the possible fields for playing space led to the conclusion that there was room for the five hundred boys, although some of the fields were not quite as smooth as billiard tables. The result was a plan to require all of the students to take part in some sport regularly. Whether a novice or not, everyone was to be given a fair amount of instruction in the rudiments of his chosen sport, especially if the game presented technical difficulties which were somewhat forbidding to a beginner. And in planning to have everyone start at the beginning, it was thought best to make no exception of the players who had been formerly self-elected members of the 'varsity squad. This meant that a playing season would be divided into two parts, approximately even. During the first part of the season all of the playing would be intramural. At the end of the preliminary season a squad of best players would be chosen to constitute a 'varsity, while the class teams would reorganize to play a championship series.

At this point someone may wonder why we did not go the whole distance and organize solely for intramural games. The answer is simple enough: there is offered in the game with Exeter an opportunity to match strength with an honored opponent in a grappling contest which demands a team's very best skill and strength. This is good for the team and good for the rest of the boys, who welcome a chance to get together and express loyalty. The final game serves as a wholesome climax, which no one at Andover would care to eliminate. So the Exeter game was retained, of course, and to prepare for it there was arranged a short schedule of games with college freshman teams.

When the first experiment with the new plan began, in the fall of 1911, we found that two hundred boys had chosen football, while the other three hundred had scattered, with soccer, track, cross-country running and tennis following in order of numbers. The greatest difficulty was the problem of securing coaches for the two hundred football candidates. But Principal Stearns and two members of the faculty were impressed, and they, with the captain-elect of the school team, made up a committee of five, which undertook to sort out the two hundred into four class

squads of three teams each. One coach was assigned to each class squad, while the head coach covered all of the squads, going from one to another in turn. At first all of the time was spent in mastering the rudiments of the game,—how to fall on the ball, how to tackle, how to block, and how to start quickly. Then the defensive play was explained for each position, and finally a few simple plays for offense prepared them for their first games. The schedule of games included Wednesdays and Saturdays, when there would be six games going on. As the playing periods were short, we usually had three games on one field, thus making necessary only two sets of officials.

As for the quality of play produced in this preliminary season, nothing accurate can be said. In the first division, where the four best teams were competing, there would be occasional exhibitions of play by the novices which quite startled the coaches, promises of future value which were not always made good. But we had genuine satisfaction in seeing the bleachers empty and the fields covered with boys who were having a mighty good time. And when the 'varsity squad was chosen the coaches felt that the extra amount of time which each player had actually put in under fire would just about make up for the time lost in getting the team under way. That is to say that the new plan as compared with the old had given each individual four times as much actual playing in games, but of course not the same kind of experience that comes with meeting an unknown opponent.

At the end of that first season under the new plan we were pleased to see our first team win from Exeter. It proved to some of our anxious young alumni that the plan would not ruin a team. On the other hand, no one believed that the team had won *because* of the new plan, for five of the eighteen men who played had been trained under the old plan as well as the new; and I may add that one of the five was the All-American fullback for this year, Captain-elect Mahan of Harvard. He was a great power for the team on offense; though, I believe, on defense he played last man, and had only one opportunity to tackle.

Perhaps you may be interested in the question of whether or not a team playing under our plan can cope successfully with one which plays under the old plan with outside coaching. It is certainly not our major issue, but at the same time we confess to hoping for a fair measure of success in the long run; and I shall be glad to sketch briefly the history of our experience in the three years which have followed our first experience in football. I stick to football simply because I have been more closely related to it. The baseball story would run pretty nearly parallel.

Of the four seasons of football in which our plan has been in operation, the second season was by far the fairest test of its effect upon the school team. In this season of 1912 there were

no left-over players who had won their spurs under the old plan. The material was about average in weight and power. When they went on the field to play Exeter they were opposed by an average Exeter team of about equal power. The result was a very evenly contested match, which might have gone either way. Because it happened to go Andover's way by one touchdown, there was no feeling that the victory was due to the new plan. But there was some assurance in the minds of the faculty coaches and others who followed the season closely, that under normal conditions the new plan would not seriously handicap the development of a school team.

In justice to our plan let me say that the last two seasons have brought abnormal conditions into the final game with Exeter. We have been defeated twice by large scores; we would have been defeated twice by large scores under any system ever devised. In 1913 there came the first reaction at Exeter after a long series of defeats. The result was an exceptionally powerful team. At the same time our material dropped almost to the zero point, so that the best team we could develop was far below the Andover standard. Naturally this team was outclassed in the annual game.

There was a still greater surprise waiting for us in 1914. Exeter's season record had been unusually strong, with not a single touchdown registered against it. But our own team was ever so much better than the weak product of 1913; it had shown some promise of strength against the Yale freshmen, and was almost an average Andover team. Nevertheless, all of the strength which our little boys could summon availed not at all when that powerful Exeter team got under way. There was material which would make any college coach in the country very ill from envy. If published weights can be trusted, the Exeter average was exactly equal to Harvard's, and five pounds heavier than Dartmouth's. Our team was again outclassed, and had only a small crumb of comfort in the fact that they were the only team to cross Exeter's goal line. May I repeat that if we had been given the same defenders trained under the old plan, and the same opponents, the result would still have been a one-sided game.

Only in one respect do we feel that our plan may be tending to detract from the Exeter game some of its charm as a sporting event. We have gained, as we hoped to gain, a period when we are sheltered from newspaper publicity. It is possible, therefore, that the high school stars who enjoy this kind of advertisement are carefully avoiding Andover. And if this proves to be the case we shall not consider it as a calamity.

This report on our experience must be limited. Although we do not feel that our plan is a perfect one, nor that our experience is necessarily illuminating to other institutions, we do believe that we have made genuine progress in meeting our own problems.

And as for the future, we shall certainly continue to follow up a policy which has brought so much benefit to our boys, physically and morally. We believe that a resident in one of our American educational institutions should not be allowed to choose between scholarship and athletics when he can just as well have both.

MENTAL TRAINING IN FOOTBALL.*

PERCY D. HAUGHTON, HARVARD UNIVERSITY.

As I was getting on the train in Boston yesterday, I found two men in earnest conversation. As can be imagined, they were talking business. The point is that the conversation continued throughout the afternoon and well into the evening when I retired, and much to my surprise when I got up this morning I found the same two gentlemen in the same two seats discussing the same business problems. As we neared Chicago, one of them finally said, "If I could only get out in the open air, I could fix this thing in no time." Then he added, "After all, the very best thinking I ever did in my life was in the good old days when I played football."

This was too much for me. I had been half listening to the conversation during the twenty-two hours that we were on the train, and when he said that, I said, "I beg your pardon for interrupting your conversation, which seems to be very serious, but I am coming to Chicago to-day to talk to a body of men on the very subject which you have spoken of, and naturally it interests me to hear you say what you have." He turned to me, and said: "Well, I don't know whom you are going to address, but you tell them for me that I learned more in the days when I played football, more about handling men and business problems, than I have learned in the last twenty years. Of course, that is a strong statement, but you can tell it to them from me." And that man is one of the most successful and largest manufacturing merchants in Chicago. I am happy to bring you that message from him.

Collateral to that story is another incident which I hesitate to tell, because it may seem somewhat derogatory to the curriculum of Harvard University, and also it may appear as if I were rather conceited to tell such a story. Nevertheless, two or three years ago a boy came to me who had played on the Harvard team for three years, and had graduated *cum laude*, and he said, "I have been thinking this over for some time, and I want you to know that to my mind, as far as I am able to judge life, I got more out of your football course in Cambridge than from any of the other courses which I took." "How do you mean you got more out of it?" I said. He replied: "When I was a boy my father and my school-teacher used to tell me about self-sacrifice, obedience, discipline, preparedness, procrastination, and other long words, which did not mean anything to me. I

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did not know how to apply them to my life in any way. But when I got into football, and saw the methods which were used, and the comprehensiveness with which the subject was treated, I began to see that there was some sense in being on time, for instance; that obedience was necessary; that self-sacrifice was part of the game; and above all," said he, "a feeling of being prepared, of preparedness, began to get hold of me. If I remember correctly, you used to call the football season a race against time." I did call it that, for that is what it is, and this point had sunk into that fellow, and he said, "I now understand for the first time what procrastination means, because," he said, "I have learned to be prepared." I do not know how much of a man he is going to turn out to be, but as I have already mentioned, he graduated *cum laude* at Harvard and he is engaged in a very active business which requires a proper mental attitude in order to size up conditions which are ever changing, and an ability to meet them with a corresponding defensive move.

Since the close of the season, I have been very much impressed in reading some of the expert writers' opinions on football. I have been impressed with the emphasis which these writers, men who follow the game closely, have put upon mental development in football. They say that a certain team showed proper mental training to a great extent; that another team, as individuals, showed that they understood the subject more intelligently. I believe it was Mr. Herbert Reed, writing for *Harper's Weekly*, who put it in words about like this. He said that brains were at a greater premium this year than ever before, and that a tremendous advance had been made over the old-time method of preparation, when pounding, rather than thinking, put a team in shape for its final test. That shows that he and the other sporting writers of this country are beginning to appreciate that brains are the essential in football. We coaches have realized this fact for a great many years; the public through the newspapers are beginning to wake up to the fact that brains are needed; and yet one feels that perhaps this side of football has not percolated into the recesses of all the faculty meetings of the various colleges throughout the country. The faculty's attitude toward football is that there is too much time devoted to it, too much time taken away from the books, as they put it. The professor is apt to dwell upon and to see only one side of the game. When he says that there is too much time taken away from the books, he forgets that a boy, when he goes to his football practice, is getting just as good mental training as he does in the schoolroom, if not better. I say as good or better, because football players are always very much interested in their subject, and I doubt if that can be said of all the subjects which are given in college.

The professor forgets also that, owing to the intensity of feeling and the pressure which is brought to bear from graduates and coach, these men are actually made to keep up in their studies. Most of the colleges in this country have a rule which says that if a man goes on probation he is not allowed to represent that college on the 'varsity team. In order that no candidate be lost for this reason, the captain, coach, graduates, and undergraduates join together and say to the boy who is not a world-beater in his studies, "If you do not keep up in your studies, and if you get on probation, you are disgraced, just as much disgraced as if you break training physically." And you all know how serious an offense that is in any of the colleges and in sports generally. It seems to me that this is a movement which should spread through every college, so that the football and the baseball player and other athletes should be automatically kept up in their studies. I know parents who have thanked me for my interest in that movement at Harvard. We have worked very hard there and have organized an elaborate system, in that a boy, when he goes on probation, has to go and interview between five and six old Harvard graduates, and before he gets through he comes out so impressed that he will not get on probation again. All of this tends to show you that the influence of football particularly is more beneficial than detrimental, in that it not only keeps a man up in his book work, the curriculum proper, but it is also a training in itself, not only in the mere fact of his having to learn his signals and all that kind of work which is quite a feat in itself, but it also brings out the tremendous advantage of being able to act quickly and decisively under conditions which are not met in the ordinary curriculum of college courses.

It would be unnecessary for me, I am sure, to detail to you the kind of mental work which the average team undergoes during the season. However, I do want to bring out the fact that owing to the nature of the game—the present game is only some three or four years old now—and the methods which are being employed in teaching it, the pupil is getting far more out of football than he did in the old days. Then a man of two hundred or two hundred and fifty pounds was the fellow who could play the position. Weight was what was wanted; never mind the rest. That was one of the phases which made football so unpopular with parents and professors. Fortunately, the rules were changed so radically that to-day the football player is a man of average weight, of active body and especially active mind. Coaches have learned, I think from what I have heard them say, that instead of taking a football player and trying to impart to him intelligence, it is far better to take a bright boy and teach him football. That, of course, does not hold in all colleges, nor does it mean that every boy on every team is a bright boy.

Nevertheless, owing to the nature of the modern game, the bright boy is at a premium, and coaches are improving their methods tremendously in teaching the subject more comprehensively to these boys, so that they play the game more intelligently than they used to. Also, by understanding the subject as a whole, they act instinctively in situations where they would fail if they had not played football.

The thought which I hope you will take home with you is that football, although it has its dark side and tremendous disadvantages, which have already been mentioned, is yet a great deal more of an educational factor than you would imagine. I have gone over with one of the instructors at Cambridge his ideas of how a course in any subject should be conducted, and I was greatly surprised and equally pleased to find that the methods which we have used in football and which are used in other colleges correspond almost entirely to his method of teaching his subject. In other words, you may say that a subject of any sort in college comprises a series of lectures; that it includes laboratory work, collateral reading, conferences, weekly or monthly tests and final examinations. It is very easy to see how the same system can be applied and is applied to football methods. The coach gives his blackboard lectures, it may be a history of the game, it may be on the methods which are, or have been, used, or should be used. Next comes, so to speak, the laboratory work, and that is the practice on the field. As to the reading, there is plenty of football literature now which is distinctly good, and in which all players are interested. The weekly tests are the minor games, and the final test or final examination is the final game of the season.

I hope that as time goes on football as a source of mental training will be recognized as a valuable addition to the curriculum of every university in this country.

**EXAMINATION OF THE SWIMMING POOL AT THE
NEW GYMNASIUM OF THE RENSSELAER
POLYTECHNIC INSTITUTE,
TROY, N. Y.**

SCOTT W. MACKEY, ADAMSVILLE, ALA.

FOREWORD.

This thesis is submitted by the author as a Graduation Thesis, Class of 1913.

The subject was determined upon as the result of several conferences with Dr. W. P. Mason. Its object is to answer many of the questions which it was anticipated would arise upon the completion of the new swimming pool.

A tentative title was decided upon and submitted to the director of the institute, together with a short statement of the plans to be followed. The subject was accepted in a letter of June 15, 1912.

The tests have extended over this past school year, but have necessarily been discontinuous, owing to the demands made by other studies. The delay in the completion of the construction of the tank also considerably shortened the working period.

Throughout the experimental work the methods laid down in Doctor Mason's "Examination of Water" have been followed for the most part.

**CRITICAL EXAMINATION OF THE SWIMMING POOL AT THE NEW
GYMNASIUM OF THE RENSSELAER POLYTECHNIC INSTITUTE:
WITH A VIEW OF DETERMINING THE BEST METHODS OF
KEEPING THE WATER THEREOF IN PROPER CONDI-
TION FOR BATHING.**

It is only within very recent years that the care of swimming pools has begun to receive the attention it deserves. The subject is one of considerable importance, since in any semi-public institution of this character, frequented by a large number of persons daily, there is bound to be ample opportunity for exposure to disease of one sort or another. It seems entirely possible that a swimming pool might, under these conditions, serve to convey pathogenic organisms from one person to another.

Since typhoid fever is a water-borne disease we would naturally look for trouble from this source, the more so as it is quite impossible not to take the water into the mouth and sometimes even to swallow it.

The following investigation was undertaken with these things in mind. The first part was devoted to a critical study of the methods in use, and to determining the state of the water under these conditions. The second part sought to determine the true value of the use of chlorine as a disinfectant and to bring out any points in the construction, operation or management of the pool and its accessories which would tend to keep it in a safe and inviting condition for bathing.

Description of the Pool.

The swimming pool is located in the basement of the new '87 gymnasium, in a room ninety-seven feet long, forty feet wide and eighteen and one-half feet high. The entrance to the pool from the locker room above is by way of the main staircase, which admits the bathers to the west end of the room. At this end are located nine shower baths, a urinal and a steam room. A gallery supported from the ceiling extends around the four sides of the room. The floor of this gallery is of white marble, and the side walls of the room from this floor down to the level of the pool are covered with white tile three by six inches in size. The floor around the pool is of terrazzo. The room is well lighted by windows on the south and east sides, which open on the gallery floor level. It is also lighted by incandescent electric lights in the ceiling.

The pool itself is seventy-five feet long and thirty feet wide, varying in depth from four feet at the east end to eight feet at the west end. It is tiled on the bottom and sides, including the scum gutters, with three-quarter inch square white tiles laid in cement. This gutter extends around the four sides of the pool and carries off any scum or excess water. It is drained by twelve three-inch pipes at equal intervals around the pool. The end of each pipe is covered with a strainer in the bottom of the gutter. Clean-outs are provided for each of these. There is also a four-inch overflow pipe at one end of the pool, with a strainer placed about one-half inch above the bottom of the gutter.

A twelve-inch cast iron circulating pipe extends from the deep end of the pool, near the bottom, to the filter room. From this pipe the water is forced through the heating and filtration systems, and then back to the pool through two two-inch pipes which discharge on either side of the pool, near the shallow end. Any water on the terrazzo floor surrounding the pool is drained away from the scum gutters to strainers connected with pipes which carry it to the scum gutter drainage system, independently

of the gutters. This is designed to keep any dirty water on the floor from being swept into the pool.

It may be of interest here to note that particular care was taken to leave no interstices behind the lining of the pool. This is important, as any water which might collect there could not escape quickly when the pool was emptied, and the pressure behind the lining might reach a considerable amount. This was actually the case in New York some years ago, when the slabs of marble lining a pool in that city were thrown out by the pressure behind them when the water was let out of the pool. For the same reason a four-inch open tile drain extends across the west end of the bottom of the pool and leads to a manhole outside of the building.

Filtration and Heating Systems.

The water is circulated from the pool through the filtration and heating systems by a two horse-power electric motor, which is directly connected to a centrifugal pump. The pump is one which will not become stopped up by hair and lint from the bathers. This matter is one of more importance than would be supposed, and further mention is made of it later on.

The water after leaving the pool first passes through the heating drum, and thence to the filters. These filters, which are four in number, are of the mechanical or rapid type, and were furnished by the New York Continental Jewell Filtration Company. Two of them are of the "New York Sectional Wash" type, and two are of the "Jewell" type. The main difference lies in the means of washing the sandbeds. In the first type the entire force of the wash water is directed against a one-third section of the bed until it is cleaned, then the remaining thirds are washed in the same manner. In the "Jewell" type, however, the water enters under the entire bed at once, and the agitation of the sand is effected by means of a revolving rake which thoroughly breaks up the bed during the period of the wash.

These filters are run in multiple, and their combined output under normal conditions of running may be taken as one hundred gallons per minute. From the filters the water returns to the pool as noted previously. For filling the pool and washing the filters the city supply is used.

Initial Condition of the Water.

The tank was completed and filled with water in November, 1912; and a complete analysis of the water was at once undertaken, in order to find out the condition of it before any bathing began. This report is shown in full on page 208. Similar complete analyses were again made on December 3 and December 9, 1912. These are shown on pages 209 and 210.

RENSSELAER POLYTECHNIC INSTITUTE

Department of Chemistry

No. I

ANALYSIS OF WATER

(SANITARY)

From SWIMMING POOL R.P.I. GYMNASIUMsee note on back of sheetSample taken Nov. 15, 1912 Analysis begun 11/15/12

RESULTS IN PARTS PER MILLION:

			Ammonia		ALBUMINOID
			FREE	TOTAL	
Odor <u>None</u>	Color <u>None</u>	Turbidity <u>1.0</u>	1. <u>0.09</u>	<u>0.11</u>	<u>0.02</u>
Chlorine <u>4.0</u>	N in Nitrites <u>0.0058</u>	N in Nitrates <u>0.38</u>	2. <u>0.02</u>	<u>0.045</u>	<u>0.015</u>
Required Oxygen <u>2.0</u>	Alkalinity <u>75</u> CaCO ₃ /l. <u>0.3</u>		3. <u>0.015</u>	<u>0.015</u>	<u>0.000</u>
Hardness (soap test) <u>32.4</u>	Zinc <u>—</u>	Copper <u>—</u>	4. <u>0.0075</u>	<u>0.0075</u>	<u>0.000</u>
Hardness (permanent) <u>61.2</u> CaCO ₃ /l.	Lead <u>—</u>		5. <u>0.0075</u>	<u>0.0075</u>	<u>0.000</u>
Dissolved Oxygen <u>—</u>	Dissolved CO ₂ <u>2.2</u>		6. <u>0.0000</u>	<u>0.0050</u>	<u>0.005</u>
				<u>0.1500</u>	<u>0.040</u>
				<u>0.3000</u>	<u>0.080</u>

Micro-organisms found per c. c. or per "Standard Unit"

Name	Number	Notes as to Microscopical Examination
		<u>Plankton or similar organisms</u>
		<u>not present</u>

CONFIDENTIAL ANALYSIS

Total Colonies per C. C. on Gelatine or Agar (48 hours) <u>0.4</u>	Mutillity (Fished from Red Colonies) <u>—</u>
Red Colonies per C. C. on Lactose Litmus Agar <u>none</u>	Nitrite (Water Direct) <u>positive</u>
Nitrite (Fished from Red Colonies) <u>—</u>	Indol " " <u>negative</u>
Indol " " " <u>—</u>	

S.R.C.C. Water to Smith		C. C. Water to Smith		Red Colonies Fished to Smith	
Tubes of <u>Smith</u> Broth		Tubes of <u>—</u> Broth		Tubes of <u>—</u> Broth	
Bull Reaction					
First Gay Gas (per tube)					
Total Gas (per tube)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Per cent. H ₂ (per tube)					
Bacillus Culi Communis		1 CC		<u>none</u>	
		1/2 CC			

REMARKS

Polus Solus 5th
Album not present by Logwood test

NOTE.—This sample was taken from the east end of the swimming pool at the foot of the ladder. Depth of water about eighteen inches. The pool was being filled with filtered water and had not been used for bathing.

After establishing the condition of the water as noted above, the pool was thrown open to the students on December 10, 1912. With the exception of the Christmas and spring vacation periods, it has been in continual use up to the present date, June 1, 1913.

In January, 1913, a series of tests were made to determine the condition of the water after having been in use for a period of about one month. These tests consisted of the determination of the total count (of bacteria per c.c.), both on agar-agar and on gelatine media; the determination of the presence or absence of coli (*bacillus coli communis*), as indicated by the presumptive test with lactose bouillon,* and the determination of the chlorine present, in parts per million. Daily determinations looking towards the detection of an excess of alum in the water were begun at this time and carried on throughout the whole period of this examination. The results of these tests are presented in the following table:

TABLE No. 1.

Date 1913	Time	T. Count on Jelly per c.c.	T. Count on Agar per c.c.	Gas in L. Bouillon 0.1 1.0	Chlorine in p.p.m.	Ni- trite	Dun- hams
January 7.	9.00	475	210	0/2 0/2	3.1	+	—
January 8.	9.00	545	89	0/2 0/2	3.2	+	+
January 9.	9.00	6800	860	0/2 0/2	3.2	+	+
January 10.	9.00	5620	740	0/2 0/2	3.4	+	+
January 10.	5.30	6900	1080	0/2 2/2	3.5	+	+
January 11.	2.15	25120	2570	1/2 1/2	3.2	+	+
January 13.	9.00	2960	410	0/2 0/2	3.3	+	+
January 14.	9.00	890	390	0/2 0/2	3.3	+	—
January 15.	9.00	4280	670	1/2 1/2	3.1	+	—
January 16.	9.00	3460	1290	1/2 2/2	3.0	+	+
January 18.	12.45	15500	1770	0/2 2/2	3.2	+	+
January 20.	1.00	650	76	0/2 0/2	3.3	+	+

N. B. In the column showing the gas formation, the denominator of the fractions shows the number of sowings made and the numerator shows the number of positive results.

Collection of Samples.

The water samples were collected from a depth of about eighteen inches below the surface of the pool, in half-liter bottles having ground glass stoppers.

Ice packing of these samples was unnecessary, as they were taken at once to the laboratory and sowings made from them. Fifteen minutes was the usual elapsed time between sampling and sowing, and thirty minutes the maximum.

Laboratory Treatment of Samples.

The total count of bacteria per cubic centimeter of water was then determined by the usual method of counting the colonies

*Also by the reduction of nitrates and the Indol "reaction."

on the regular beef agar and beef gelatine media. The slowness with which the total count appeared was quite characteristic. In most cases from four to six days elapsed before the total count could be obtained. Liquefaction of the gelatine media by the bacteria was the exception rather than the rule. It may be noted that chromogens or color-forming colonies were very numerous in all these plates.

The coli sowings were made in duplicate in lactose beef medium. Sowings of one c.c. and of one-tenth c.c. were made in each case. The formation of gas in these tubes would show, presumably, the presence of one or of ten gas-forming germs in the original sample.

The chlorine determinations were made by titrating one hundred c.c. of the water against a standard solution of silver nitrate, using potassium chromate as an indicator.

The results of these tests were not very reassuring. The total count is high in many cases and the nitrate and Dunham's solution (indol reaction) give positive results in nearly every case. But the chief cause for concern is the large number of tests in which gas is formed when the water is sown in lactose bouillon. These tests were carried on without the knowledge of the man in charge of the filtration, in order that they might more clearly indicate the value of his judgment as to what amount of filtration per day was required. This value he determined by the appearance of the water alone, and it averaged perhaps eight hours per day. During the above test the filters were not cleaned oftener than once in three days.

As a result of the foregoing examination, the filtration was increased to eleven hours per day and a strong recommendation was made that the filters be cleaned as often as the loss of head (indicated by increased pressure on the pump gage) showed it to be necessary. Undoubtedly much of the trouble at this period was due to ignorance and lack of the proper hygienic precautions on the part of the bathers. The remedy for this is discussed later.

The second series of tests was begun early in April, 1913, and covered a period of four weeks.

A tabulation of the bacteriological results follows:

TABLE NO. 2.

Date 1913	T. Count on Jelly per c.c.	T. Count on Agar per c.c.	Gas in L. Bouillon		Nitrite	(Indol) Dunham's
			0.1	1.0		
April 7.	3956	270	0/2	0/2	+	+
April 8.	6560	540	0/2	0/2	+	+
April 9.	4570	980	0/2	0/2	+	+
April 10.	4230	460	0/2	0/2	+	+
April 11.	3520	290	0/2	0/2	+	+
April 14.	2530	310	0/2	0/2	+	+

April 15.	2230	435	0/2	0/2	+	+
April 16.	6240	3560	0/2	0/2	+	+
April 17.	5750	1880	0/2	0/2	+	+
April 18.	4270	2260	0/2	0/2	+	+
April 19.	6670	2440	0/2	0/2	+	+
April 21.	2440	2060	0/2	0/2	+	+
April 22.	6220	4160	0/2	0/2	+	+
April 23.	4570	3850	0/2	0/2	+	+
April 24.	2239	1860	0/2	0/2	+	+
April 25.	4640	3630	0/2	0/2	+	+
April 26.	6940	5860	0/2	0/2	+	+
April 28.	2970	1820	0/2	0/2	+	+
April 29.	3270	1860	0/2	0/2	+	+
April 30.	5650	2340	0/2	0/2	+	+
May 1.	3890	1560	0/2	0/2	+	+
May 2.	5880	2160	0/2	0/2	+	+
Average	4511	1760	0/2	0/2	+	+

This series shows a distinct improvement over the former one. The total count is still somewhat high, but the presumptive tests for *b. coli* are uniformly negative.

Determinations of the alkalinity of the water in the pool, and the presence or absence of alum were also carried out. The number of gallons of fresh water added are noted and also the number of hours per day during which filtration was carried on. From this the values in the next column were obtained. The last column shows the addition of sodium carbonate to increase the alkalinity.

TABLE No. 3.

Date 1913	Alkalinity in p.p.m.	Alum present	Fresh Water	Filtration Hrs.	Gal.	Na ₂ CO ₃ in Kilos
April 7.	8.0	+	3"	11	66,000	
April 8.	12.0	+	0"	11	66,000	
April 9.	8.5	+	0"	11	66,000	1.0
April 10.	11.0	+	0"	11	66,000	
April 11.	8.0	+	5"	11	66,000	
April 14.	15.0	+	2"	11	66,000	
April 15.	12.5	+	0"	11	66,000	
April 16.	11.0	+	0"	11	66,000	
April 17.	15.0	+	0"	11	66,000	2.0
April 18.	13.0	+	3"	11	66,000	
April 19.	—	+	3"	11	66,000	
April 21.	10.0	trace	2"	11	66,000	
April 22.	13.5	+	0"	11	66,000	
April 23.	18.0	trace	0"	11	66,000	
April 24.	10.0	+	0"	11	66,000	
April 25.	18.0	+	1"	11	66,000	1.0
April 26.	14.0	+	0"	11	66,000	
April 28.	10.0	+	6"	8	48,000	
April 29.	10.0	+	0"	8	48,000	1.0
April 30.	8.0	+	0"	11	66,000	
May 1.	10.2	+	0"	11	66,000	
May 2.	10.0	+	3"	11	66,000	1.0

It will be noted that the alkalinity of the pool water is very low. The alum which is present throughout is a heritage from the spring flood, when to care for the excessive turbidity of the water at that period, the valves on the dash pots were opened to somewhat more than the normal running amount. This was adopted as a temporary measure, but through a misunderstanding, was allowed to continue. At the beginning of these tests the alum was in such excess that a considerable precipitate could be obtained by making the water strongly alkaline and letting it stand overnight. In testing for the alum the usual method with freshly extracted logwood chips was supplemented by the use of a solution of hematoxylin.

This proved entirely reliable, and equal in sensitiveness to the logwood chips. The keeping qualities of the hematoxylin solution were demonstrated by using a solution prepared one year ago as a check on the freshly prepared solution.

The amounts of sodium carbonate added are shown in the last column. This, in connection with the fresh water, gradually reduced the excess of alum until at the end of the four weeks' period, it only remained as a faint trace.

For purposes of comparison the following determinations were also carried out and are given here to show the character of the city supply which was used as the raw water in filling the tank and in washing the filters.

TABLE No. 4.

Date, 1913	Alkalinity	T. Count on Jelly per c.c.	Chlorine in p.p.m.
April 21.	30.5	64	2.1
April 22.	26.5	84	2.4
April 23.	25.5	72	2.5
April 24.	29.0	60	2.6
April 25.	26.0	68	2.4
April 26.	31.5	72	2.4
April 28.	33.0	60	2.2
April 29.	27.0	85	2.9
April 30.	28.5	69	2.7
May 1.	28.0	87	2.6
May 2.	31.0	91	2.6

(TO BE CONTINUED.)

A COURSE OF STUDY IN DANCING FOR HIGH SCHOOL GIRLS.

CARRIE VAN R. ASHCROFT, CHAIRMAN DEPARTMENT OF PHYSICAL TRAINING, JULIA RICHMAN HIGH SCHOOL, NEW YORK CITY.

INTRODUCTION.

The purpose of this series of articles is to present available dance material to serve as a *Course of Study in Dancing* for use in the gymnasium in girls' high schools.

Experience in teaching high school girls and instruction of teachers of physical training at Columbia University for the past six summer sessions have shown the necessity for judicious selection and careful grading of dance material.

The following selection of technical exercises and steps has been made from the educator's viewpoint, omitting those exercises that lead to toe dancing and professional or stage dancing.

There is an abundance of fine material that is available and that satisfies every demand for a comprehensive course of study in dancing for girls' schools.

The material is arranged in eight parts, corresponding to the eight terms or half-years of the New York City high schools. The plan for each term includes: (1) A few of the simplest preparatory exercises. (2) Simple dance steps and combinations of steps. (3) Adagios and port des bras. (4) A classical dance of the solo type. (5) A couple dance.

Each of the four important dance rhythms forms the basis of a term's work. The polka, schottische, mazurka and waltz are placed in the first, second, third and fourth terms, respectively. A more advanced arrangement of these same rhythms occurs in the fifth, sixth, seventh and eighth terms.

For this arrangement of the dance rhythms and the special consideration of each rhythm, I am indebted to Miss Josephine Beiderhase, assistant director of physical training in the New York City public schools. At her suggestion ten years ago, it was adopted as an Outline for a Course of Study in Dancing in the Wadleigh High School. Her original outline for each term included a classical dance, a folk or national dance and a couple dance—all built upon the same rhythm.

This outline has become general in our girls' high schools and has proved to be a practical one, so I have used it as the working basis of this course of study.

For many of the couple dances, I am indebted to Mr. Roderick C. Grant, of the New York Society Teachers of Dancing, with whose permission these dances are used.

Appropriate and popular folk dances will be suggested for each term, but they will not be described.

The music in this article was composed by Miss Marie F. MacConnell, director of music in the Jamaica High School, New York City, taken from her book of music especially arranged for this course of dancing. In this book, Miss MacConnell has brought together a number of selections from the standard authors and has also composed simple melodies for the various exercises and dances, having in mind the average playing ability of high school girls. This music probably will be published soon. A few of the selections will be printed in these articles, to show that it is possible to have very simple and adequate music for the technical exercises. It is essential to have music that will give the impulse to the dancer to bring out special values in some exercise or dance. For example, the music for the beatings suggests the snap and vigor so necessary for the correct execution of beatings, the quiet, flowing style of arm movements is brought out in the music for the *port des bras*, and the slow, continuous movement of the deep bow is developed in the music for the courtesy.

STANDARD DANCING POSITIONS.

Arm Positions.

First Position. Arms at shoulder level or midway between waist and shoulder; slightly curved; hands opposite chest; fingers pointing toward each other, about three or four inches apart. There should be one long gentle curve from shoulder, through elbow, back of hand and fingers.

Second Position. Arms out at side slightly below shoulder level, palms down or facing forward.

Third Position. One arm in second position; curve the other until the hand is above the head; look into the upper hand. The position is named from the upper arm. If the right arm is up, the position is third right.

Fourth Position. One arm in first position, the other curved, and up above the head. The upper hand is directly over the lower hand. Both hands are exactly in the middle line. The position is named from the upper hand.

Fifth Position. Both arms curved forward, and up above the head; finger tips pointing toward each other, and three or four inches apart; look into hand.

Foot Positions.

First Position. Heels together, toes pointed outward.

Second Position. Foot extended directly to the side about one foot length.

Third Position. Front or back. Right foot in third front, the heel of the right foot placed against the hollow of the left foot, toes turned out; or right foot in third back, the hollow of the right foot placed against the heel of the left foot.

Fourth Position. Front or back. Foot extended in a straight line either directly forward or directly backward, about one foot length.

Fifth Position. Front or back. Right foot in fifth front, the heel of the right foot placed against the toe of the left foot, toes turned

out; or right foot placed in fifth back, the toes of the right foot placed against the heel of the left foot.

These positions can be taken on the sole of the foot, the ball, point or heel. When one foot is lifted from the floor it is said to be in a raised position.



FIG. I. FIRST POSITION



FIG. II. SECOND POSITION



FIG. III. THIRD POSITION



FIG. IV. FOURTH POSITION



FIG. V. FIFTH POSITION



FIG. VI. ARMS LATERAL POSITION TO RIGHT

Arm and Foot Positions Combined as an Exercise.

First. Arms and feet in first position (1-2).

Second. Point the right foot in second position, as you move arms to the second position. Look at right hand (3-4).

Third. Draw the right foot to third position front as you carry the left arms up into third position. Look into the left hand (5-6).

Fourth. Point the right foot in fourth position front as you carry right arm forward into first position. Look into the right hand (7-8).

Fifth. Draw the right foot to fifth position front, as you carry right arm up to fifth position. Look up into hands (1-2).

Second. Sway the weight forward to the right foot, and point the left foot in second position as you carry the arms into second position. Look into the left hand (3-4).

First. Draw the left foot to first position, as you carry the arms down sideways to body (5-6). Pause (7-8). Music, measures 1-8. Repeat the whole exercise using the left foot. Music, measures 9-16.

Arm and Foot Positions Combined.

M. D. MacCannell



BEATINGS (BATTEMENTS).

When one foot is extended to an open position and returned to the closed position, with a strong pushing movement, it is called a *beating* (a "battement" from the French word *battre*, to beat). These beatings are small or large.

In the small beatings (*petits battements*) the tip of the free foot touches the floor about one foot length away from the supporting foot. In the large beatings (*grands battements*) the free leg is raised to a horizontal position, so the foot is in line with the hip. In both the small and the large beatings the emphasis of the movement comes as the foot is returned to the closed position.

Small Beatings.

Stand with right foot in fifth position front and arms in second position. Point the right foot in second position and draw it forcibly to fifth position back (1-2). Point it again in second position and draw it

forcibly to fifth position front (3-4). In this way, make eight small beatings sideways, drawing the foot to fifth position back and front alternately, music, measures 1-8. Begin with the left foot immediately and point it in second position. Draw it to fifth position front and back alternately, eight times. Drop arms sideways with the last count, music, measures 9-16. The small beatings can also be made from the fifth position to the fourth position front or back and returned to the fifth position, but they are generally practiced in second position.

Large Beatings.

Forward. Stand with right foot in fifth position front and arms in second position. Raise the right leg forward, until the foot is in line with the hip. Replace it in fifth position front, on count one and hold for count two. The downward movement of the leg comes with the accent of the music. In this way do seven large beatings forward. Then point the foot in second position and draw it to fifth position back, music, measures 1-8. Repeat the seven large beatings forward with the left leg and one small beating in second position. This brings the right foot again in fifth position front, music, measures 9-16.

Sideways. Immediately after the last count of the preceding exercise, raise the right leg sideways until the foot is in line with the hip and replace the foot in fifth position back (1-2). Do seven large beatings, placing the foot alternately in fifth position back and front. Then point the right foot in second position and draw it to fifth position front, music, measures 1-8. Begin at once with the left foot and do seven large beatings, replacing the foot in fifth position front and back alternately. Finish with a small beating to fifth position back, and drop the arms sideways, music, measures 9-16.

Grandes Battements et Petits Battements M. F. Mac Carroll

M. M. 72 = 4

SIMPLE MOVEMENTS.

There are four simple or fundamental movements in dancing: slide, cut, leap, hop.

Slide (glisser, to slide).

Stand with the right foot in third position front. Slide the right foot (toe pointing to right side) into second position, and instantly bring up the left foot. Repeat three times to right and finish by drawing the left foot to third position front. Repeat to left. There is a very slight bending of the knees during the slide, and the knees are stretched again just as the feet are brought together. Do the exercise right and left alternately eight times, sixteen measures.

Cut (couper, to cut).

A cut moves from an open through a closed to an open position. Stand with the right foot pointing in fourth position front. Raise the foot in fourth position to begin the movement. Place it forcibly in third position and instantly swing the left foot backward into fourth position raised (1, "and"). Replace the left foot and raise the right forward (2).

Execute sixteen cuts with right foot in front. Then change and put the left foot in front on count sixteen (eight measures). Repeat the exercise with the left foot in front (eight measures).

Leap (jeter, to throw).

Leap from foot to foot, raising the free foot close in fifth position back with each leap. The leap can be low or high. For a first term exercise the leap should be low and without arm movements. Stand with the right foot in third position back. Brush it sideways and up from the floor as you raise it in second position. Then leap on it sideways right and raise the left foot in fifth position back. Repeat to left. Leap from foot to foot for sixteen counts, one leap to each count; that is, two leaps for each polka measure. Use eight measures.

Hop (sauter, to hop, to jump).

Jump upon the foot that bears the weight of the body. Stand with the right foot in third position front; slide it diagonally forward and hop on it six times; left leg is raised backward, and is straight (1-6). Step back on left foot (7). Bring right foot to left, heels together (8). Arms—with the slide on count one, carry the arms from first position, to right forward and up, palm out. Left arm is stretched back over left leg. Look forward at right hand. As you step back into first position on 7 and 8 carry the arms into first position again. Repeat to left side and right and left.

ANALYSIS OF POLKA STEP.

Hop, slide, cut, leap. Stand with the right foot in fifth position back. Hop on the left foot and at the same time raise the right foot close in fifth position back ("and"). Slide the right foot sideways (1). Close left foot to right and instantly raise (or cut) the right sideways ("and"). Leap sideways onto the right foot and bring the left foot up close in fifth position back (2). Repeat to left side.

In moving forward with the polka step, the free foot is raised forward with the initial hop and the cut is made forward. In moving backward the free foot is raised backward and the cut is backward.

In the social polka the initial hop is omitted. The social or glide polka is three slides, cut and leap.

The polka step used in folk dances emphasizes the initial hop and practically omits the slide, making its analysis hop, step, cut, step.

PAS DE BOURRÉE.

This step is named from an old French dance. The French word *bourrée* means stuffing. One *bourrée* usually consists of three very short, quick steps executed high upon the balls of the feet. In a simple *bourrée* the same foot remains in front. In a "*bourrée changé*" the foot is placed in front and then in the rear.

Simple Bourrée.

Forward. Stand with the right foot in fifth position back; arms down at the sides. Raise the right foot in second position, as preparation. Place it on the ball of the foot, in fifth position front (1). A very short step sideways left on ball of left foot ("and"). Place right foot again on ball, in fifth position front and raise left foot sideways (2). As you raise the left foot, bend the right knee, and bend slightly at hips to look at the extended left foot. Repeat the *bourrée* with the left foot, by placing it in fifth position front on (1). Step sideways right ("and"). Place left foot again in fifth position front and raise the right foot sideways (2). Continue right and left for eight times moving forward.

Backward. With the eighth *bourrée* forward the right foot is raised sideways. Place the right foot in fifth position back (1). Step sideways left ("and"). Step on right, again, in fifth position back, raising left foot sideways. Repeat left and right for eight times. Place the foot in fifth position back each time as you begin the backward *bourrée*. Arms—bend the right across the chest and hold the left in second position as you bend to look at the right foot. Sway the arms across to the opposite side as you raise the left foot sideways.

Bourrée Changé.

Stand with the right foot pointing in fourth position back; right arm in first position, and left arm in second position. Look forward to right corner of room. Place right foot in fifth position back (1). Step side left ("and"). Cross right foot in fifth position front and lift the left foot close in fifth position back (2). Sway the arms across the chest so with count two the left arm is in first position; the right is in second. Look forward to the left corner of the room. Repeat, beginning with left foot. Repeat right and left for sixteen times, using sixteen measures of music.

A Simple Exercise in Bourrée Changé.

Touch the right foot twice in the second position. Bend from hips to look forward at foot over the bent right elbow. (One measure.) Lift the body very tall, arms in second position for the *bourrée* across to left and carry the left arm to first position on count two just as you finish the *bourrée*. The right arm is in second position. Look forward to left corner of room. Then bend sideways left to look down at left foot, as you begin the exercise with the left foot.



FIG. VII. SIMPLE BOURRÉE

Bourrée Series.

Combine bourrée changé with the bourrée, moving forward.

Bourrée changé sideways to left and right, eight times. Sway arms across chest as explained above.

Move forward with the forward bourrée.

In place at front, do the bourrée changé eight times. Then move backward with eight backward bourrées. Thirty-two measures in all.

This is an excellent exercise to gain lightness. The steps should be dainty. This exercise would not be used as a step in a dance.

COMBINATION OF STEPS AS SUGGESTIONS FOR A POLKA SERIES.

I. (Eight measures.)

A. One polka step forward right bending body slightly to right side; arms in third position left with left arm high over head. Repeat forward left and bend left, changing arms to third right. Repeat right and left (four measures).

B. One polka step backward right turning body so you look forward over left shoulder. Left arm is in first position, right is down and back, just below second position. Repeat the polka step backward left, turning body to left so you look forward over right shoulder, and change arms across to left side. Repeat backward right and left (four measures).

II. (Four measures.)

Point right foot in second position and cross it behind (one measure). Arms in second position. Bend sideways right to look down at right hand. As you point the foot backward, change arms to third position right and stand very tall; look up at right hand, bending slightly to left. Three running steps, turning around to right and gaining distance back-

ward, arms in second position (one measure), or one polka step sideways right.

Repeat left, and right and left.

III. (Eight measures.)

A. Stand facing right front corner of room with right foot in fifth position back. Slide the right foot diagonally backward and hop lightly on it; raising left foot forward. Sway arms freely across to right side (one, "and"). Step forward on left foot raising right leg backward, and sway arms across to left side (2). Three running steps diagonally forward to right, with arms in second position. Repeat all of above toward front left corner of room. With count one as you slide hop backward on left foot, turn to face the front left corner of room. With the running steps move toward the left corner of room.

B. Move backward with three polka steps right, left, right. Turn body and sway arms with each step as explained in combination I. B. Close with three running steps diagonally forward, left, right, left. With the third step carry the weight well forward, so the back foot simply points. The left arm is raised forward palm out; the right arm is down and back. If preferred use one *bourrée* *changé* instead of the three running steps as a finish. Begin the *bourrée* by crossing the left foot in fifth position back (1); step side right ("and"); cross the left foot in fifth position front and sway arms across chest to left side (2). This leaves the feet in an easy position to repeat all of combination III.

IV. (Eight measures.)

Two slides sideways right; arms in second position (one measure). Step sideways right and point left foot to left side. Bend body sideways and look at pointing foot. Sway arms across the right side (one measure). Repeat two slides, step and point moving to left and repeat to right. Close with a courtesy to left on measures seven and eight. Repeat all, beginning left foot. This brings the courtesy to the right.

ARM MOVEMENTS (PORT DES BRAS).

Arm movements or "port des bras" are large, free arm circles made by carrying the arms from one position to another. The shoulder joint is the center of motion. The following exercises should be used as a series of movements. Use two measures of music for each exercise and do each exercise twice; sixteen measures for the series.

I.

Arms in first position. Move them slowly to second position, finishing with the palms up, and open, as in a gesture of presentation. Let the eye follow the movement of the right hand. Turn the head front, and close the movement, by lowering the arms to the sides of the body. In the downward movement the wrist leads, that is, it presses downward as the arms slowly sink. The hands are open; fingers straight.

II.

From first position to third left; a slight pause in third position. Look into left hand. Carry the left arm into second position, following it with the eye. Turn the head front, and lower the arms as explained in exercise I.

III.

From first to fifth position, a slight pause; out to second position. Let the eye follow the right hand. Lower the arms as explained in exercise I.

IV.

From first position to fourth left; a slight pause; out to second position. Let the eye follow the left hand. Lower the arms as explained in exercise I.

M. M. 58 = J. Port de Bras M. F. 110 = C. 111

A musical score for a dance exercise. It consists of three systems of staves. The first system has a treble and bass staff. The second system has a treble and bass staff. The third system has a treble and bass staff. The music is in 4/4 time and features a variety of notes, rests, and dynamic markings. The title 'Port de Bras' is written above the first system. The tempo 'M. M. 58 = J.' and the performance instruction 'M. F. 110 = C. 111' are also present.

Courtesy.

Step right foot to second position, draw left foot through first to fourth position back, bending both knees. Place the weight upon the left foot as you rise and draw the right foot to third position front. The hands hold the skirt; arms lifted sideways about the height of the waist. Use one measure of the music. Repeat the courtesy to left using the second measure.

Courtesy

M. M. 1 = 54 M. F. 110 = C. 111

A musical score for a dance exercise. It consists of two systems of staves. The first system has a treble and bass staff. The second system has a treble and bass staff. The music is in 4/4 time and features a variety of notes, rests, and dynamic markings. The title 'Courtesy' is written above the first system. The tempo 'M. M. 1 = 54' and the performance instruction 'M. F. 110 = C. 111' are also present.

A CLASSICAL DANCE, SOLO TYPE.

The Butterfly Polka.

I.

Point forward and cross behind.

One polka step sideways.

Four times (eight measures).

Point forward and cross behind (measure 1).

Point right foot diagonally forward, right hand down over foot; left arm out sideways palm down. Look down at right foot, bending slightly at hips (1). Cross right foot back; right arm up over head; left arm in second position, palm down. Look to left side (2).

One polka sideways (measure 2).

With arms in second position, do one polka step sideways right.

Repeat all to left (measures 3-4).

Repeat right and left (measures 5-8).



FIG. VIII. BUTTERFLY POLKA
Step 1, Count 1



FIG. IX. BUTTERFLY POLKA
Step 1, Count 2

II.

Two polka steps forward.

Slide-hop and three running steps.

Twice (eight measures).

Two polka steps forward (measures 1-2).

Polka forward right and left. Arms move slowly from first to second position for the two polka steps. Follow the movement of the right hand.

Slide hop (measure 3).

Slide forward and hop on right foot; left leg raised backward. Arms sweep down sideways to first, and up to fifth just as you hop. Look up into hands.

Running steps (measure 4).

Three running steps, left, right, left. Arm sideways down to body. Repeat all of step II, beginning right foot (measures 5-8).



FIG. X. BUTTERFLY POLKA
Step 2. Count 5-6

III.

Glide polka sideways.
Four times (eight measures).

Glide Polka (measures 1-2).

Two slides sideways right and one polka step sideways right. Arms in third position right. Change arms through first to third left and repeat the step to left.

Repeat to left (measures 3-4).

Arms, third position left. Look up at left hand.

Repeat to right and left (measures 5-8).

IV.

Two polka steps backward.
Two polka steps turning.
Twice (eight measures).

One polka step backward, right (measure 1).

Move backward with one polka step right. Turn body one-fourth turn around to right. Arms across body to right side, palms down. Look to front over left shoulder.

Repeat backward left (measure 2).

Arms across to left. Look to front over right shoulder.

Two polkas turning (measures 3-4).

Turn in place to right with two polka steps, right and left. It is practically six tiny steps, on balls of feet. The polka step is not clearly defined. Arms in third position right. Look to front as long as possible over left shoulder, then turn head to look over right shoulder.

Repeat all, beginning backward right (measures 5-8).

Hold the attitude with arms in third position, just an instant, as a finish.

V.

Repeat step I three times.

Courtesy to left.

Eight measures.

As a finish step sideways left and courtesy on measures seven and eight.

Music.

Electric Polka, by C. C. Roeske; published by Ditson. Use first page of music only. First and second melody for steps I and II. Repeat music for steps III and IV. Close with first melody, step V.

A COUPLE DANCE.

BY

R. C. GRANT.

Formation. Couples stand in a large circle facing forward as if to march around the room. Inside hands clasped; outside hand holds skirt. Begin with outside foot. Move forward in line of direction with three polka steps. With the first polka step, partners are face to face; with the second, they are back to back and with the third polka step, they face again. Let go hands and with the fourth polka step make a complete turn alone, moving forward; girl turns outward to right. The leader (boy) turns outward to left. Waltz position—leader places right hand on girl's waist; she places her left hand against his right arm, near the shoulder, and places her right hand in his left. In this position do the social polka twice, moving forward in line of direction and turning to right. The social polka consists of two slides and one polka step. Make the turn with the polka step. Repeat all as often as desired. Use any polka music.

FOLK DANCES.

Sailor's Hornpipe, Bohemian Strassak, Irish Long Dance, Sellinger's Round.

MUSIC FOR FIRST TERM.

Simple polkas for practice in technic and polka combinations.

1. *Fior di Margherita*. Arditi. Published by Ditson.
2. *Bluette Polka*. G. Bachman. Published by Ditson.
3. *Cajolerie*. R. C. Jackson. Published by Schirmer.
4. *Moment Musical*. Schubert Op. 94. No. 3. Published by Schirmer.

For dance constructions.

1. *Electric Polka*. C. C. Roeske. Ditson.
2. "*Reconciliation*." Polka de caractere, from *Les Millions d'Arlequin*. Drigo. Published by J. H. Zimmerman, Leipzig.

(TO BE CONTINUED.)

NEWS NOTES.

By vote of the executive committee, the following have been admitted to membership in the American Physical Education Association:

Louisa E. Arildson, Okmulgee, Okla.
G. Maynard Bartlett, Dresden St., Gardiner, Maine.
Ruth Beard, 1015 West 23d St., Cedar Falls, Iowa.
Ruth D. Blockwell, 651½ Union Ave., N., Portland, Ore.
Ira I. Bloom, 25 St. Nicholas Ave., New York, N. Y.
Neil A. Cameron, 3028 Minnehaha Ave., Minneapolis, Minn.
Harriet H. Curtis, 2122 College St., Cedar Falls, Iowa.
Bertha E. Dahl, 2115 Main St., Cedar Falls, Iowa.
Carin H. Degermark, 1084 East Grant St., Portland, Ore.
Ruth M. Earle, 38 Campion Ave., Jamaica, N. Y.
Besse E. Engle, care of N. S. P. E., Battle Creek, Mich.
Bertha K. Fisher, 235 Apsley St., Germantown, Pa.
Grace E. Fisher, Ironwood, Mich.
Bessie L. Flanders, 7310 Tenth Ave., Brooklyn, N. Y.
Faith G. Fuller, 38 Concord Ave., Cambridge, Mass.
Anne Garmen, 108 Madison Ave., Madison, N. J.
Olive Haisley, N. S. P. E., Battle Creek, Mich.
Jennie E. Harris, 2416 Olive St., Cedar Falls, Iowa.
Virginia Hawkins, 356 Union St., Brooklyn, N. Y.
Peter Joseph Heffernan, 341 East 21st St., New York, N. Y.
Margaret Heissenbuttel, 689 Halsey St., Brooklyn, N. Y.
Ora B. Hicks, 2222 Olive St., Cedar Falls, Iowa.
Harry L. Hillman, Hanover, N. H.
Sylvia Hirsch, H. P. O. San., Battle Creek, Mich.
Maude S. Hood, 508 South 6th St., Monmouth, Ill.
Agnes C. Horn, 120 South Barclay St., Waterloo, Iowa.
Robert L. Howards, 190a Third St., Jersey City, N. J.
Hugh J. Hutchison, 179 Marcy Ave., Brooklyn, N. Y.
Eunice Jacobson, Box 37, American Fork, Utah.
Frances Kahn, 250 West 112th St., Apt. 21, New York, N. Y.
Bessie C. Keller, 3517 San Jacinto St., Dallas, Texas.
Hannah D. Kirkpatrick, Studio Club, 35 East 62d St., New York, N. Y.
Frank Louis Kleeberger, 2238 Roosevelt St., Berkeley, Cal.
Lillian L. Klein, 118 West 115th St., New York, N. Y.
Dr. Earl B. Koch, 3146 Darwin Terrace, Chicago, Ill.
Cecelia A. Leverone, 608 Washington St., Brighton, Mass.
Beatrice F. Levy, 547 West 157th St., New York, N. Y.
Meta Lurie, 522 West 157th St., New York, N. Y.
Nelle E. Lyman, 112 Manchester St., Battle Creek, Mich.
Bessie Martin, N. S. P. E., Battle Creek, Mich.
May A. Neissbaumer, 133 East 84th St., New York, N. Y.
Katherine O'Connell, 302 West End Ave., New York, N. Y.
Anna M. O'Keefe, 218 Prospect Place, Brooklyn, N. Y.
Maude O'Neill, 11, P. O. San., Battle Creek, Mich.
Ruth W. Parker, 575 Bedford Ave., Brooklyn, N. Y.
E. W. Pennock, Boston Y. M. C. A., Boston, Mass.
Elda May Platt, 515 East 3d St., Waterloo, Iowa.
Dora M. Robbins, 2213 College St., Cedar Falls, Iowa.
J. Peterson Ryder, Drexel Institute, Philadelphia, Pa.
G. A. Rynearson, Preston, Idaho.
Florence Sacks, 1048 Trinity Ave., New York, N. Y.

Rose Salwen, 1526 43d St., Brooklyn, N. Y.
Ada Alice Scheffer, 25 Ashland Place, Brooklyn, N. Y.
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Belle L. Taylor, 251 West 103d St., New York, N. Y.
William P. Uhler, Jr., 233 South 2d Ave., Mt. Vernon, N. Y.
Jacob Van Dellen, 2304 College St., Cedar Falls, Iowa.
Helen Van Houten, 223 Jewett Ave., Jersey City, N. J.
Guy Wellington, Lawrenceville, N. J.
Dorothy Louise White, 140 Prospect St., Ridgewood, N. J.
Fannie E. White, 126 South 1st Ave., Mt. Vernon, N. Y.
Claire Wiley, 195 Dartmouth St., Rochester, N. Y.
Clyde Williams, Station A, Ames, Iowa.
May Yole, N. S. P. E., Battle Creek, Mich.

NATIONAL EDUCATION ASSOCIATION MEETING.

The Physical Education Program is in charge of Baroness Rose Posse, president of the Physical Education Section. The meetings of the National Education Association will occur at Oakland, Cal., August 16-28.

Chalif has just put out an attractive catalogue describing the winter work and summer courses at his school of dancing.

LIVE A LITTLE LONGER PLAN.

An attractive pamphlet has just appeared by Miss M. E. Bingham, secretary of Live a Little Longer Committee, of Rochester, N. Y. The pamphlet contains an address delivered at the eighth annual meeting of the Association of Life Insurance Presidents, at New York, December 19, 1914. This pamphlet can be secured by addressing the Association of Life Insurance Presidents, 1 Madison Ave., New York, N. Y.

ATHLETIC BADGE TEST FOR BOYS.

The Playground and Recreation Association has just put out an attractive report of the test as it appeared in the April, 1913, *Playground Magazine*. The bulletin is No. 105. It can be secured from the Playground and Recreation Association of America, 1 Madison Ave., New York, N. Y. Price 5 cents.

GROUP ATHLETICS FOR BOYS AND GIRLS.

The Department of Recreation, Russell Sage Foundation, has just published two leaflets, Nos. 140-141, price 2 cents each. These outline tests in group athletics for boys and for girls. They are attractive suggestions.

REPORTS OF STANDING COMMITTEES.*

I. FOOTBALL RULES COMMITTEE.

Early in March the full committee appointed by this association convened in New York City in conjunction with the full representation of the old rules committee, and after an amalgamation as heretofore made a careful revision of the playing rules of football. Great care was taken to make no radical changes that would affect materially the general tactics and strategy of the game. It was felt by all that the rules as they now stand make possible a magnificent game of football. The dangers and objectionable features have been minimized and eliminated almost completely, so that the game has been safeguarded and protected as never before. There were, however, many minor points which received consideration and revision, the sum total of which was considerable. These changes have for the most part perfected and clarified the technique of the play, have made it less likely that the meaning of the code should be misunderstood, and have sought to raise the standard of sportsmanship.

One of the important changes was the elimination of the "kick out" after a touchback or safety, and the substitution for this play of a scrimmage on the twenty-yard line.

The neutral zone was given added significance by forbidding any encroachment on this territory in making shifts in the line after a team is lined up on the offensive.

The intentional throwing of a ball to the ground to take advantage of a technicality of the rules when a man attempting to make a forward pass found himself forced back, was penalized by a loss of ten yards. To give the passer greater protection from possible injury, a rule was added inflicting a penalty on any one roughing the passer after a pass had been made.

The rule safeguarding the punter was made less drastic, and he consequently has somewhat less protection during a kick than he formerly enjoyed. Tripping by the hand was interdicted and "hiding on the side lines" classed as unsportsmanlike conduct.

* Ninth Annual Convention of the National Collegiate Athletic Association, Chicago, Ill., December 19, 1914. Submitted for publication by the secretary, F. W. Nicolson.

In the general interest of the game, it was decided to incorporate a rule withdrawing the privilege of walking up and down the sideline which the head coach has heretofore enjoyed. No one is now permitted to occupy a place upon the sideline.

On account of the intricacy of the play, it was thought best to reintroduce the field judge in important games, though the addition of this official was made optional and not compulsory. A few other technical changes, of very minor importance, were also incorporated.

Taken as it now stands, the code may be safely said to have produced the best game of football that we have ever had, pleasing alike to players and spectators, reasonably safe, clean, spectacular; combining the old running, rushing and kicking game with the open forward pass game, and holding out infinite possibilities for the display of tactics, strategy and generalship on the field of play.

The possibilities in offensive and defensive tactics have been rapidly developing all over the country, and it is highly desirable that the rules of the game when once perfected should be tampered with as little as possible, so that coaches and players alike may be freed from uncertainty and have a stable and definite guide, not subject to change, that they may work out to better advantage the science and strategy of this great and glorious American game.

HENRY L. WILLIAMS, *Chairman.*

II. FATALITIES AMONG FOOTBALL PLAYERS.

It is the opinion of your committee that the reasons for an annual report upon football fatalities have largely ceased to exist, and that further emphasis through the report of the kind that has been submitted during the last five years should be discontinued. Consequently, I would recommend that with the receipt of this report the committee be discharged from further consideration of the subject.

During the season just closed the press has chronicled the death of some thirteen different individuals from the results of participation in football games or practice. Three of these were reported to be college men, of whom but one was a member of a regular 'varsity team.

Mr. John Albert, of the University of Chicago, died at the Battle Creek Sanitarium early in December from a complication of abdominal disorders. A report on the case of Mr. Albert states that "from the medical point of view it is possible that his death was caused by an injury received in football, but as yet

we have no direct evidence either in the history or pathology of the case to indicate this as the cause."

Mr. William S. English, of Mount St. Mary's College, Maryland, died October 12 from concussion of the brain received in a scrub game in which but fifteen players participated, seven on one side and eight on the other. He was not a member of the first team. It was not even a class game, but an impromptu affair gotten up in a spirit of fun.

Mr. T. G. Brown, stated to be a member of the Sewanee University team, died October 3. This boy was a preparatory student and a member of the Sewanee Academy team.

All other deaths reported were of boys under twenty years of age on high school, athletic club, and irregular teams. One of these deaths occurred as a result of blood poisoning from a scratch on the arm received in a game. So far as can be learned, this boy was the only well-trained and fit athlete of the ten non-college men who have died from football.

The results of this fall only emphasize that which all college men have insisted upon from the first, that football is a strenuous game; that no one should participate in it who is not physically fit in every respect to begin with, and then only after he has had proper training and has learned to adjust himself to the conditions arising in the game. It has been laid down time and again as a cardinal principle that no student should participate in this or any other type of competitive athletics without a preliminary medical examination of a most thorough sort to protect the individual against unsuspected organic weaknesses.

The cause for an outcry against football as a brutal and degrading sport cannot be maintained, and the sensationalism that has attached to it heretofore should cease to exist. However, this association should go on record, and even go out of its way, to call the attention of authorities of secondary and elementary schools and of the public generally to the real dangers of the game that exist for those who are physically unfit either because of age or weakness, and for the untrained, and of the necessity of most careful physical and medical examinations of candidates for teams and of expert supervision of all players both in practice and in the playing of games.

GEO. W. EHLER, *Chairman.*

The above report was accepted, without the recommendation as to discontinuing the committee. The executive committee were given power to enlarge the scope of the committee, if it seems desirable, by way of including similar information from the secondary schools, and, perhaps, for other lines of sport besides football.

III. CENTRAL BOARD ON FOOTBALL OFFICIALS.

An effort has been made by the Central Board on Officials during the past year to maintain a more definite regularity and classification in the work and consequent appointment of officials, to economize in as great a measure as possible the collegiate expense by territorial selection, to eliminate quietly from their jurisdiction officials who have proved irresponsible and incompetent, and college appointments which have proven well-nigh impossible, and this in addition to maintaining the regular and somewhat monotonous routine work as carried out in past years.

The present season has proved a somewhat expensive one in covering widespread territory and in educating in Central Board work a new secretary to the Board. This secretary, Mr. Herbert W. Taylor, will probably continue with the Board for a time, thus strengthening its executive ability, as he has proven a most earnest and painstaking assistant in a rather difficult position. Furthermore, at the end of the year the Central Board has a very carefully graduated list of officials obtained from an insistent questionnaire and systematic observations during the past season. This will be at the service of next year's graduate and undergraduate managers, a list which clearly defines in how great a degree services have proved worthy, and in all fairness we must add, unworthy, or at least unsatisfactory, in the work of the past year.

A report to this important body must in first and last analysis be an absolutely frank and honest statement, and for that reason while the balance sheet must announce great satisfaction in systematizing and developing the work of organization, in maintaining a graduated rating of official capacity, in having secured a more coöperate preliminary selection in midsummer of the officials for some fifteen or twenty of the most important games, and in receiving a constantly augmented dignity of reception among the colleges, yet with this satisfaction, it must admit the somewhat increased expense of administration for reasons cited above, the continuing difficulties in the yearly change of student management, the unfairness of two or three colleges in accepting an honorable business obligation which is never obviated by a mid-season change of mind, and the constant difficulty in maintaining a strict neutrality in the relation of officials to the colleges and extending to their appointment.

From the central point of view, it would be a step forward if there might obtain a uniform appointment of permanent trained graduate managers, as experience in the past has shown that these men uniformly appreciate rules of business conduct.

It might be well to urge again this national body to criticise freely and suggest freely to the Central Board and then obtain the support of the represented institutions, in sustaining such action.

The customary statistics follow, indicating the general character and scope of Central Board work.

	1913	1914
Number of college letters received	420	436
Number of letters written to colleges	383	496
Number of letters received from schools and officials	600	673
Number of letters written to schools and officials	450	422
Number of change notices to colleges	75	100
Number of change notices to officials	40	60
Additional and circular correspondence	500	975
Notices of Interpretation Meeting	400	425
Number of telegrams sent	345	372
Time covered by Central Board work	8½ mo.	8½ mo.
Approximate number of full working days	90	105

DATA ON SCHEDULES.

Number of colleges regularly using service	51	56
Additional colleges using service	41	41
Schools using service	41	28
Freshman teams using service occasionally	6	5
Western teams using service occasionally	9	5
Southern teams using service occasionally	13	13

DATA ON APPOINTMENTS.

Total final appointments	663	765
Total final freshman appointments	25	20
Total final school appointments	71	86
Total final substitutions	100	120
Total number of appointments	859	991
Number of officials used	175	196
Maximum number of appointments for one official	13	11

DATA AS TO FEES.

Highest fee	\$100.00	\$100.00
Lowest fee	5.00	5.00
Number of games using highest fee	4	7
Grading of fees:		
Larger colleges:		
Minimum	\$ 25.00	
Maximum	100.00	
Secondary colleges:		
Minimum	15.00	
Maximum	30.00	
Small colleges:		
Minimum	10.00	
Maximum	25.00	
School fees:		
Minimum	5.00	
Maximum	(Last year, \$20.00) 25.00	

DATA AS TO LISTS.

Total number of officials on Central Board List	379	429
Increase over last year		50
Number dropped	42	46
Number of applications rejected		37
Number having limitations	97	80
Number having no limitations	229	325
New applications not yet acted upon		67
Men used not on List	3	6
Number on Western List	103	122
Number on Missouri List	121	138
Number on Ohio List		103
Number on Southern List	34	53
Number on Colored List	4	7
Total on all Lists	641	852

In the future work of the Board, the chairman would recommend:

1. That the national body freely discuss and advise its subordinate committee.
2. That every college stand firm in upholding not only principles of sport, but principles of common business honesty.
3. That the goal of the collegiate world in official appointment be that of strict neutrality.
4. That an increasing spirit of courteous reception to officials as gentlemen be fostered throughout the country.
5. That every representative of this body consider himself personally appointed to render all assistance in his power to the improvement of this important work.

JAMES A. BABBITT, *Chairman*.

The above report was accepted with the elimination of a classification presented by the chairman of football officials, in accordance with reports received concerning their work.

IV. BASKET BALL RULES COMMITTEE.

The Rules Committee has made special effort during the past few years to get into close touch by letter, questionnaire and conference with the responsible basket ball men in different parts of the country. The result has been the establishment of a better understanding and more even administration of the rules in the various sections of the country, and a more harmonious development of the game.

Conferences for the study of the rules have been held during the past season under the guidance of the members of the Rules Committee in Chicago; Columbus, Ohio; Kansas City; Minneapolis; New York City, and Philadelphia. These confer-

ences have been very well attended and have been productive of very good results.

The Eastern Intercollegiate League has inaugurated the plan of putting the responsibility for the administration of the championship games in the hands of a permanent staff of officials who are elected by the managers and captains of the league teams at a meeting held early in the fall, and who are assigned to games by a special committee of graduates. These assignments are not known by the individual teams until the day of the game. The objects of this plan are to increase the feeling of responsibility on the part of this picked group of officials; to stimulate them to study the rules; and to free them from the possible influence of those interested in a given game.

The two leagues formed by the Rules Committee last year are starting their second season, namely: the Northeastern League, made up of Williams, Wesleyan, Union, and Colgate; and the Pennsylvania League, made up of: Eastern section—Swarthmore, Lehigh, and Lafayette; Central section—Albright, Susquehanna, Gettysburg, and Bucknell; Western section—State, Washington and Jefferson, and the University of Pittsburgh.

For the first time this year the Southern Atlantic Athletic Association, of which Dr. J. W. H. Pollard, of Washington and Lee University, is president, has recognized basket ball officially.

A most significant mark of progress is the adoption of the college rules by the Reading High School, Chestnut Hill Academy, and one other school in the Philadelphia section. This is all the more remarkable since Philadelphia is what might be called the hotbed of "cage" basket ball.

The committee has continued its policy of making as few changes as possible in fundamental rules and placing the emphasis upon those changes in form and statement that make the intent of the rules clearer to both player and official. The changes this year, then, are both few in number and, in comparison with those made in previous years, of relatively minor importance.

1. The umpire is relieved of the duty of keeping time. The advantage of having the timekeeper an impartial official, and on the floor in close touch with the game, was outweighed by the disadvantage of having the attention of the umpire divided between the watch and the players at the most critical periods of the game.

2. It is made clear that the man making a free throw may not touch or cross the foul line while making his throw.

3. The rule governing the position of the players, who are jumping for a ball put in play by the official, has been made more specific and the warning for dropping the hand from behind the back before the ball is touched is abolished. A decision for

"delaying the game," or for "personal foul," as the case may be, is made for each infraction of the rule.

4. The rule against blocking is still further emphasized, and it is hoped that this last relic of football interference in basket ball may be abolished during the coming season.

The most serious infractions of the rules—and the ones that have the most profound influence upon the character and development of the game—are those that arise from some form or other of rough play due to personal contact. This fact is worthy of close consideration for the purpose of attempting to learn the causes that are operative in bringing the condition about, and of correcting them if possible. It is evident that many cases of personal contact are not roughness in the real sense of the term, but are clearly unintentional and incidental to the speed of the game. The competent official has no difficulty in judging these incidents correctly, and he is justified in allowing the game to continue without interruption on this account. Such cases need not detain us, as they are of no real significance, and need only to be checked from going to extremes.

The majority of the cases of personal contact and roughness are of a very different sort. It is quite evident that these fall into two principal classes: those due to the player's ignorance or misconception of the rules; and those due to the willingness of the player to "take a chance" to rob an opponent by unfair means of an advantage he may have gained by speed or strategy, or to gain an advantage by unfair means that he could not gain by good play.

Teams and individuals that play dirty ball are generally either inferior to their opponents and are willing to try to overcome the difference by unfair means, or they have been badly coached and are ignorant of the real purpose of the rules and the spirit of the game.

These problems of sportsmanship are not new, nor are they peculiar to basket ball, but they are nevertheless of fundamental importance. It comes down to the question of whether or not the men teaching and competing in college sports are willing, frankly and knowingly, to tolerate deliberate violations of the rules in any game for the sake of victory. If the question appeared as clear as the above statement, under actual conditions, there would be no doubt as to the answer. It is the purpose of this notice to show that evasions and violations of the rules of any game do involve standards of personal honor. The following statements made by Doctor Gulick nearly twenty years ago, when the game was still in its infancy, are to the point: "There are those who deliberately violate the rules—this is due possibly to a false conception of the object of the game; this

object is good sport, not the mere winning of a victory. The good sportsman wishes to win only when he can do so by superior playing, and not by unfairness or violation of rules. A code of rules is a mutual agreement which a gentleman will no more evade or deliberately break than he will break any other agreement for the sake of personal advantage."

It should be the ideal of every college player, coach, and official to look upon the rules as a gentleman's agreement, and to play according to their spirit and intent, rather than to seek for ways of violating them with the least risk of penalty.

The Rules Committee is of the opinion that real progress is being made in the direction of a more general realization of these ideals of sport.

JOSEPH E. RAYCROFT, *Chairman*.

V. COMMITTEE ON TRACK RULES.

The secretary reported for Professor F. W. Marvel, the chairman of the committee, that a new edition of the track rules had not been published, inasmuch as the association was expected, at this meeting, to take action regarding the publication of a Handbook including all their rules.

VI. ASSOCIATION FOOTBALL.

Your committee, as regularly organized, with the addition of Dr. R. Tait McKenzie, of the University of Pennsylvania, and Mr. C. H. Mapes, of Columbia, has, in the judgment of your secretary, been very materially strengthened. Yet, on the other hand, the opportunities for work in the advancement of association football have proved very limited. An effort was made during the past year to continue the general stimulus to the game throughout the country with the idea of giving it a stronger recommendation in the calendar of events, and to further this end there were planned conventions of heads of school departments, the dissemination to various colleges of soccer literature and various forms of stimulating communications. These were actually carried out as three phases of work.

1. That of personal stimulation and individual effort on the part of the different members of the committee.

2. The effort to obtain school conferences, which resulted in one definite conference held at Haverford in November, and other informal conferences or interviews in other important centers.

3. A careful questionnaire was sent out, of which a résumé report will be quoted later.

Before appending his own report, the secretary would quote a communication received from the chairman of the committee, Mr. Garcelon, of Harvard:

"In a rough report of the progress of soccer football in New England, I can state that in the public high schools in many of the larger cities, soccer is played. About 7000 boys are playing scheduled games in the Boston grammar schools. The large private schools have taken up the game and the annual games between Andover and Worcester Academy and similar schools are fixtures. In some of the larger academies there are intramural leagues. From three colleges which do not now play the game, I have reports that games are being planned for next spring. Outside of the colleges there is a keen interest in the game. Many more teams than formerly participate in organized leagues. As to taking any special action to stimulate further an interest in the game, it does not seem to me to be necessary. I believe that the game will naturally thrive and get a strong hold among boys and young men, and that since a good start has been made, it is about as well to let that interest naturally develop as to try to stimulate it. I may say that the papers are giving much more attention than formerly to the games that are played throughout Massachusetts."

In reviewing the reports received from the various colleges and schools in our organization, it is rather difficult to indicate exactly the substance of the report, but the following may be taken as indicative.

Seventy-six institutions have reported to the secretary. The topics to be reported were:

1. Has the game of soccer made any progress with you either from an intercollegiate or intramural standpoint during the past year? If so, what?
2. If utilized as part of the required physical education work, will you please outline this.
3. To what extent has soccer in your immediate neighborhood outside of the college improved?
4. If soccer is played, what form of coaches and officials do you employ?
5. Please give your frank personal opinion of the game, and desire for its future.

In reply to the first question, as to progress from an intercollegiate or intramural standpoint, thirty-two institutions reported that they did not play the game; eight, no progress; three, playing by freshmen; three, lack of space; six, increase in interest; five, intramural organization; two, as a regular class exercise; and one desired to introduce the game.

Replying to the second question as to the incorporation of association football as a part of the physical education system,

eight colleges reported it as used in the required work, two as optional in the required work, and eight simply reported it not required, an answer which is rather indefinite. One college played to obtain a knowledge of the game, four reported it utilized as a form of general exercise, two as a substitute for gymnasium work, and four as utilized in the physical training, but for freshman and gymnasium classes only.

In answer to the third question, twenty colleges reported little or no progress as shown in relation to general athletics, and thirteen as having increasing interest. Several did not reply to the question at all.

On the fourth point, investigation as to the form of coaches and officials, five colleges reported coaching by the gymnasium director, three employ a professional coach, three a faculty coach, three student coaches (one of them without salary), one a coach appointed by the freshman instructor in the gymnasium, and one plays with no coach.

On the fifth topic, as to a frank personal opinion of the game, thirty-three colleges were most favorable, five desired it for intramural purpose, and three did not approve of it as a college sport. Three institutions favored the other football more, but desired this, and a few institutions reported lack of space but hoped to play the game.

Summarizing the general situation of soccer football, your secretary would give this as the situation.

1. The general status of the game remains slightly improved by the development of the National Association.

2. It is gradually finding its way into colleges, as the schools pour educated soccer material into them.

3. Through educating the schools primarily do the colleges gain progress.

4. It might be desirable to form a graduate intercollegiate body of some social standing which would stand as a sort of a graduate soccer club and foster the influence of the game.

5. It would be desirable to investigate the proper time of the year for playing the game of soccer and proper relations toward the other football in relation to candidates.

Your committee believes wholly and fully in the importance of the game, and believes it will be ultimately a very strong factor in general physical education development, and furthermore recommends its use as part of the physical education course wherever such seems feasible.

JAMES A. BABBITT, *Secretary*.

REPORTS OF SPECIAL COMMITTEES.

At this point, Professor G. W. Ehler took the chair, and Doctor McKenzie presented the reports of two special committees of which he was chairman.

I. ON THE FORMULATION OF RULES FOR SWIMMING MEETS.

The committee presented a set of rules, which will be printed at length in the next Proceedings. This report of the committee was discussed briefly, and was accepted tentatively. The committee was instructed to confer with representatives of the western colleges and endeavor to modify the rules presented in such a way as to bring about coördination between all parts of the country. The committee was given power to make such changes in their proposed code of rules as they deem best. A show of hands disclosed the fact that not more than twelve of the colleges represented have competitive swimming meets.

II. ON THE REGULATION AND CONTROL OF ATHLETICS IN FOREIGN COUNTRIES.

At the outbreak of the war, most of the nations of Europe were in a stage of organization in athletic sports that very closely approximated the period in America when isolated groups, collected together for their favorite game or sport, were banding themselves together for the purpose of securing some uniform system of competition that would end the trickery and jockeying always present when any interclub competitions were proposed,—the period when unification was considered complete with the formation of an athletic union to take full charge of all forms of athletic competition.

With the background of our experience and that of the English athletic associations, however, they were proceeding with much greater rapidity than we have in America, and in some instances their organization was much more representative and farther advanced than ours, and by the formation of the International Amateur Athletic Federation, proposed in Stockholm in 1912, formed in Berlin, August, 1913, and meeting in France in June, 1914, a true International Union for the conduct of athletic competition was perfected. It works with the International Olympic Committee and is endorsed by representatives from the national athletic bodies of the Argentine Republic, Australasia, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, China, Denmark, Egypt, Finland, France, Germany, Greece, Hol-

land, Hungary, Italy, Japan, Luxemburg, Mexico, Norway, Peru, Portugal, Roumania, Russia, Servia, South Africa, Spain, Sweden, Switzerland, Turkey, the United Kingdom of Great Britain and Ireland, and the United States of America.

It is scarcely more than twenty-five years since Baron de Coubertin, after visiting the schools of England, saw the importance of their games and sports for national betterment and began his coöperative work with the rowing clubs on the Seine, the football clubs of the schools, and the soccer clubs of Paris. In spite of indifference and even hostility, he built up interest in athletic sports, and with true Gallic imagination foresaw the revival on a grander scale of the ancient festivals of Greece, a dream which he has seen gloriously realized at Athens, Paris, St. Louis, London and Stockholm, and may we hope it is still to be realized in a saner and chastened Berlin.

The Union des Sociétés Françaises de Sports Athletiques was a powerful and consolidated association, and a new France was being built up in a splendid athletic college, a sort of central institute for the teaching of teachers in athletics, presided over by Lieutenant Hebert of the navy and endowed by the Marquis de Polignac. The building near Rheims is now shattered by shells and the running track ploughed up by bursting bombs.

Little Belgium was not behind with her famous rowing clubs of Liège, Bruges, and Ghent, with her soccer teams of international reputation, and her Ligue Belge d'Athletism. Sweden has been going through a transition period from the time when gymnastics was the only national system, to the introduction and organization of competitive athletics, and an impetus was given to the pioneer work of Colonel Viktor Balck by the engaging of an American trainer to direct them in preparing for the Olympic games of 1912. This impetus showed not only in Sweden but throughout all Scandinavia and Finland.

The scattered clubs of Germany were gathered into the Deutsche Sport Behörde für Athletik, largely under the stimulus of the Olympic games in Stockholm and the proposal to hold the next celebration in Berlin. With that genius for organization so characteristic of the nation, a commission headed by Carl Diem was sent to "discover what were the influencing causes of the evident superiority of the American Olympic teams and to observe the American methods of physical training, with a view of taking therefrom what could be of advantage in the physical education of our younger generation, without the possibility of injury and without destroying the national originality."

As a result of this investigation, they returned with a sort of athletic missionary in the person of Alvah Kraentslein, who went from club to club preaching the gospel of athletic training to their listening ears. Austria followed suit as a matter of course.

The course of athletic organization in Sweden and Germany was not an unqualified triumph, however. Many Swedes resented and still resent the intrusion of this more individualistic form of exercise into the gymnastics that makes for consolidation.

In Germany the turners were up in arms and actually defeated the first proposed grant for the Olympic games, maintaining that they were aristocratic, that they were anti-social, and that they would break down the more democratic turner organization. It was only by placing several of his sons in the leading sports clubs and by putting on his shining armor and rattling his sabre that the Kaiser succeeded in quelling the rebellion.

In Germany, Sweden and Austria the welding together of scattered states, often with divergent interests, has been the work of the turner and social societies more than any other agency. The great mass drills and the social life of the *turnfest* have been a powerful influence for national unity since the time of Jahn.

In a consolidated, small country like England, on the other hand, where her young men must so often fill positions of responsibility in all quarters of the world, the need for individual initiative is more strongly felt, and this is reflected in her sports. Individualism is the keynote of the Anglo-American athletics, and it is for the future to decide if these two divergent views can ever be brought into accord by a judicious blending of the best features of both. At present we do not find Germany and England seeing eye to eye on many questions.

What can be done, has been done, and done well, however, by the International Federation, which will doubtless be the authoritative body in international sport.

Already they have drawn up rules and regulations for international competition in athletics.

They have started an official register of world, Olympic, and national records.

They have adopted regulation implements that must be uniform for all international competition, and hence will automatically become universal.

They have faced with all the valor of inexperience that ever-present question of a common amateur definition for international athletic competition.

In this last task they have come on some strange problems. Shall an officer whose duty it is to teach swordsmanship be considered an amateur? What should be the status of the Emperor's foresters who captured many of the shooting prizes at Stockholm, or the officers or game keepers? The turners make no distinction between amateur and professional. The Italians at Stockholm were represented by a corps of gymnastic instructors.

The amateur rule of the river Thames, in which the workers about the boats were debarred from competition with club members, sinks into insignificance before these problems which fairly parallel summer baseball.

The national athletic bodies of Europe have borrowed largely, if not entirely, from England and America their form and organization. But is our own official union a perfect model? I venture to say defects could be found.

Since the collection of the athletic clubs with which it started, many things have happened. The great national movement for playgrounds has brought athletic competition within the reach of hundreds of thousands of boys. The public schools have athletic leagues of their own. The colleges already supply more than half the Olympic champions. It seems reasonable, then, that all these organizations, the Young Men's Christian Association and other allied clubs, must be given adequate representation if our national athletic body is to be called truly national.

At this point Doctor McKenzie resumed the chair, and a report was received from the following special committee:

III. ON THE PUBLICATION OF RULES.

There are several reasons why the National Collegiate Athletic Association should give serious consideration to the question of having its own rules governing athletic contests published under its own copyright and under its immediate control. At present they are published and copyrighted by the American Sports Publishing Company, which is intimately associated with a sporting goods firm. The Association has no control over the rules, since the copyright is in the name of the American Sports Company, so that the National Collegiate has not the right to give permission to anyone else to print the rules, nor have they themselves the right to reprint the rules without permission. It is not at all uncommon for a specification to appear in the rules, or, if it is kept out of the rules, in a footnote which makes it appear official, stating that a certain ball or piece of apparatus has been officially adopted by the committee in charge of the rules and must be used in all contests. In some cases, at least, no such action has been taken by the rules committees. It is very much better to make a careful specification of the apparatus to be used and to throw the decision as to what make shall actually be used open to competition. The price of the rule books is gradually being increased, so that during the present year one must pay forty-five cents for the rules governing football, track and basket ball. The American Sports Publishing Company increased the price of the Collegiate Basket Ball Guide for 1914-15 from

ten cents to twenty-five cents without notifying the rules committee or consulting with the officials of the National Collegiate Association.

It seems that it is perfectly practicable to print all of the rules of the National Collegiate under one cover and to have them appear late in the summer, available for all the autumn and winter sports. There could be printed as a section of this handbook certain material of an educational nature that would be of great value in promoting the cause of clean sport in schools, colleges and universities.

At present the advertising value of these handbooks is limited to the promotion of the interests of one firm. There is no reason why the National Collegiate Association should not get the value of this advertising for use in promoting its own work, nor is there any reason why permission to reprint these rules under certain conditions should not be granted to responsible firms or persons. The advantages of this proposition seem to be sufficiently obvious to warrant further consideration of the question.

Your committee has been in correspondence with publishing companies to ascertain whether or not the plan is as practicable from a financial point of view as it is desirable for the reasons above cited. It appears from this preliminary survey that arrangements can be made by which our rules can be published and circulated under our own copyright and control without any serious financial risk.

Two propositions have been considered, one which contemplated the publication of the rules in their present form of individual guides for each sport, and another which provided for the publication of a Handbook of the National Collegiate Athletic Association, which should contain not only all the rules now formulated by our various committees, but also a section devoted to a statement of the organization, aims, and worth of the association. This plan contemplates a book without any, or at the most, with very few, illustrations. The price of such a book would naturally be determined in large part by the actual cost of manufacture and circulation, as they may be estimated. It provides also for the publication of "separates" containing the rules of one game which might be sold at a low price for wide distribution.

Both plans studied seem practicable financially. In case the first one is used, taking the present basket ball guide as a basis, the publishers figure that an edition of 3000 copies, including an addition of 10 per cent of manufacturing cost, would show, without any income from advertising, a net deficit of \$281.50. When we consider the fact that over 4000 copies of this guide were distributed before December 1, in spite of the increase in price, and further, that the advertising value of these books is

very great, the publishers' estimate of \$200 or \$300 net profit to be divided equally between them, and the National Collegiate Association, seems reasonable, if this advertising value is realized.

The estimated cost of a handbook made up as suggested above and containing 200 pages, including 26 pages of advertisements, bound in cloth, is, for an edition of 3000 copies, 22 cents per copy; and for a second edition of 3000 copies, 14 cents per copy. The "separates" from such a book bound in paper would cost from 1.6 to 3.2 cents per copy, according to the number of pages required.

Your committee recommends, therefore, in the light of these facts that a special editorial committee be appointed, empowered to make further investigation of this matter, and, if it seems wise, to publish such a handbook of rules and educational material as outlined above for the association.

JOSEPH E. RAYCROFT, *Chairman.*

The association voted, upon hearing the above report, to authorize the president to appoint a committee to publish a set of rules for athletic sports, except football and baseball.

MISCELLANEOUS BUSINESS.

Doctor P. C. Phillips reported the following recommendations from the Federated Committee, of which he is a member as a delegate from this association:

The Federated Committee of national organizations which have athletic interests respectfully recommends to the National Collegiate Athletic Association that it approve the principle of coöperation with other national organizations in the formation of a code of amateur rules and in raising the ethical standards of sport.

It recommends specifically that, working under this general plan, the basket ball rules committee, the swimming rules committee, and the track rules committee be empowered to coöperate with similar committees from other national organizations, and to agree upon a national code of rules for these sports if it seems to them wise.

PAUL C. PHILLIPS,
Representative of the N. C. A. A. on the Federated Committee.

The report was accepted and adopted, and the executive committee were authorized to carry out its recommendations.

Dr. J. E. Raycroft moved the adoption of the following letter:

Board of Directors,
Panama-Pacific International Exposition,
San Francisco, Cal.

Gentlemen:

The broad invitation of the Panama-Pacific International Exposition, to both individuals and groups, to participate in the athletic events of the Exposition, encourages us to respond, as a preliminary to further participation, by making the following suggestions:

That the present program of an extraordinary list of splendidly arranged competitive athletic events be broadened sufficiently, in both content and supervision, to incorporate the educational and social phases of athletic systems. We wish to suggest that the greatest need of our time, in matters athletic, is to present the subject a little less in its relation to a spectacle, and a great deal more in its relation to the finer questions of education and public recreation. The recent development of physical education and social-athletic recreation in universities, colleges, schools, Y. M. C. A.'s and public recreation centers, gives warrant for our suggestion, no less than a promise of greater and broader public interest in the Exposition itself. We see in the Panama-Pacific International Exposition the proper place and environment for endeavoring to make coherent, in national effort, a program of athletics including many of the better, finer and more necessary phases of play, recreation and sport, than are now presented in mere championship events.

We further suggest that, in the light of the untimely death, and consequent loss, of Mr. James E. Sullivan, as director of athletics, there is need of comprehensive leadership and supervision for the forthcoming events. This need will be particularly conspicuous if there is a broadening of the program as suggested above. In this connection, we wish to urge the appointment of Mr. Edward B. DeGroot, to fill this position. Mr. DeGroot's appointment is urged on the following grounds:

He is eminently qualified to give the superior, impartial leadership and supervision demanded by the office of director of athletics.

He possesses a background of practical experience, on a large scale, in both educational institutions and in the organization and administration of competitive and recreative athletics in the South Park System in Chicago, in all phases of physical education and athletic sports. The original investment in this work in the South Parks was \$9,000,000 with an annual budget of \$300,000.

He is a public recreation expert of high national and international reputation.

He was selected by Mr. Sullivan to serve on national committees of the Amateur Athletic Union. He was also Mr. Sullivan's choice for the presidency of the Central Association of the A. A. U., an office which Mr. DeGroot declined.

In 1911 Mr. Sullivan, as chairman of the Recreation Commission of New York City, endeavored to secure him for the executive leadership of New York's Public Recreation Department.

Mr. DeGroot has been retained by the San Francisco school board to develop physical education, public school athletics and social centers. He has also been retained as a lecturer on public recreation in the summer school of the University of California. He will, therefore, be in residence, within a few weeks, in San Francisco.

Finally, we urge Mr. DeGroot's appointment on the ground of good sportsmanship, both in the interest of sport and the Panama-Pacific International Exposition.

The association voted to adopt the letter, and the secretary was instructed to send a copy to the Board of Directors of the Panama-Pacific Exposition.

The executive committee were given power to fix the date and place of the meeting next year.

APPOINTMENT OF COMMITTEES.

On nomination of the executive committee, the following committees were appointed for the year 1915:

Committee on Rules for Track Athletics.

Director Frank Castleman, Ohio State University, chairman; Dr. W. A. Lambeth, University of Virginia; Dr. J. L. Griffith, Drake University.

Committee on Rules for Basket Ball.

Dr. J. E. Raycroft, Princeton University, chairman; Dr. James Naismith, University of Kansas; Mr. Ralph Morgan, University of Pennsylvania; Mr. Oswald Tower, Williams College; Dr. L. J. Cooke, University of Minnesota; Director L. W. St. John, Ohio State University; Director Lory Prentiss, Lawrenceville School.

Committee on Rules for Swimming and Water Sports.

Mr. Paul Withington, Harvard University, chairman; Mr. F. W. Luehring, Princeton University; Dr. D. B. Reed, University of Chicago; Mr. R. F. Nelligan, Amherst College.

Football Rules Committee.

Dr. H. L. Williams, University of Minnesota, chairman; Mr. E. K. Hall, Dartmouth College; Dr. J. A. Babbitt, Haverford College; Mr. Harris Cope, University of the South; Lieut. D. I. Sultan, United States Military Academy; Prof. C. W. Savage, Oberlin College; Prof. S. C. Williams, Iowa State College.

Committee on Rules for Soccer Football.

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ELECTION OF OFFICERS.

The nominating committee made the following report, and, on motion, the secretary cast a ballot, whereupon the following were declared by the chairman duly elected to office for the year 1915:

President, Dean LeBaron R. Briggs, Harvard University; vice president, Dean James R. Angell, University of Chicago; secretary-treasurer, Prof. Frank W. Nicolson, Wesleyan University.

District representatives, First District, Prof. F. N. Whittier, Bowdoin College; Second District, Prof. J. A. Miller, Swarthmore College; Third District, Prof. E. F. Shannon, Washington and Lee University; Fourth District, Prof. O. E. Brown, Vanderbilt University; Fifth District, Dean Thomas F. Holgate, Northwestern University; Sixth District, Prof. E. W. Murray, University of Kansas; Seventh District, Prof. W. T. Mather, University of Texas; Eighth District, Prof. S. L. Macdonald, Colorado Agricultural College.

BOOK REVIEWS.

THE BOY'S CAMP BOOK. By *Edward Cave*. Doubleday, Page & Co., 1914. 191 pp. Price 50 cents net.

The book is splendidly illustrated. It gives definite suggestion regarding campgrounds, tenting, personal equipment, camping kit of the troop, making camp, camp discipline, camp cooking, camp health and camp recreation. Campers will find valuable suggestions in the book.

SAFEGUARDS FOR CITY YOUTH AT WORK AND AT PLAY. By *Louise de Koven Bowen*. Macmillan Co., 1914. 241 pp. Price \$1.50 net.

Jane Addams writes in the preface of this book as follows: "The following pages give a graphic description of the sordid and careless conditions under which thousands of young people habitually live, and of the valiant efforts of a small group of citizens to enlist public agencies, state, county and city, to provide at least a minimum of protection.

"The following record of a finely sustained effort has been made by the president of the Association,* who gave most generously of her time, money and ability during every day for seven years. She brought to the perplexing task a clear mind and a spirit both ardent and generous. Every page of this book is warmed by her personal devotion and great concern. The studies given here of conditions affecting the development of city youth are a distinct contribution to that organized effort which is destined to be more imperative and far-reaching than the movement for City Planning."

The book is an enthusiastic presentation of a study made largely in Chicago. The chapters, Civic Protection in Recreation; Legal Protection in Industry; Legal Protection for Delinquents; Legal Safeguards for the Dependent; Protection Against Illegal Discrimination; give the character of the book. Chapter VII is a plea for the protection and safeguarding of the city youth; it makes clear the splendid contribution of women to this work of safeguarding the city youth. The reading of this book will be a stimulus to right personal living and the protection of the children.

FOOD PRODUCTS. By *Henry C. Sherman, Ph. D.* The Macmillan Co., New York, 1914. 12mo. 594 pp. Price \$2.25.

The plan of the author of this book has been to compile from many very widely scattered sources the best recent scientific material upon food, its composition, economic and nutritive values, its sanitary preparation and preservation, inspection, together with standards of purity. After the two introductory chapters upon "The Principal Constituents and Functions of Foods," and "Food Legislation," each representative group of food is treated in a separate chapter of length and completeness proportional to the food group considered. Each chapter is followed by a list of references well chosen and fairly complete, including to quite an unusual extent publications of the United States Government, which though of excellent value and easily obtainable, are not sufficiently familiar to citizens generally.

The appendices contain summaries of the rules and regulations for enforcement of Food and Drugs Acts, selections from food inspection

*Juvenile Protective Association of Chicago.

decisions, the American Association's Milk Committee's requirements, the Meat Inspection Law, and a good list giving in ounces the 100 calorie portion of common foods. An index of seventeen pages adds greatly to the usefulness of the text for ready reference in both laboratory and kitchen.

In general the book is as nontechnical as is consistent with scientific treatment. Specific accounts of the various industries which prepare food, and details of preparation and manufacture serve to maintain interest too often lacking in such treatises.—*G. B. A.*

ANATOMY AND PHYSIOLOGY, A TEXT BOOK FOR NURSES. By *John Forsyth Little, M. D. Lea & Febiger*, Philadelphia & New York, 1914. 12mo. 483 pp. Price \$1.

This text represents a complete, yet concise, attempt to combine the subjects of anatomy and physiology for elementary study, such as is desired by nurses and others not specializing particularly on the subject. The text is copiously illustrated with drawings taken from standard works. The selection of material is good. The text is made very readable by judicious use of large print and conspicuous headings.—*E. B.*

DRAMATIC GAMES AND DANCES FOR LITTLE CHILDREN. By *Caroline Crawford*. Illustrations by *Katharine Kellogg*. Music by *Elizabeth Rose Fogg*. *A. S. Barnes & Co.*, New York, 1914. 77 pp. Price \$1.50.

The author has compiled thirty-four well-selected dramatic games and dances for children in the kindergarten, first, second and third grades. Music has been arranged to fit every dance and game. The book should prove to be invaluable to all teachers of small children.—*L. C. S.*

ÆSTHETIC DANCING. By *Emil Rath*, Director of the Normal College, North American Gymnastic Union, Indianapolis. *A. S. Barnes & Co.*, New York, 1914. Illustrated. 135 pp. Price \$1.50.

In his endeavor to extend the work begun by the late Melvin B. Gilbert the author has been successful. The material in this text-book, leading from the simple arm and leg movements to the more complex, is admirably arranged. The book is splendidly illustrated, containing thirty clear cuts. Five selections of music with exercises adapted to them are also given. The book can be strongly recommended to all teachers of physical training who teach rhythmical exercises to girls and women.—*L. C. S.*

PATHFINDERS OF PHYSIOLOGY. By *J. H. Dempster, A. B., M. D.*, Editor of *Detroit Medical Journal*. *Detroit Medical Journal Co.*, 1914. 12mo. 66 pp. Price \$1.

The "Pathfinders" in any line of human endeavor are interesting. To the student of physiology, medicine or physical education the "Pathfinders of Physiology" will prove as interesting as a novel. The volume is not a mere history of the progress of physiology as a science, but rather an attempt to give the reader, in an intimate way, the Pathfinder's personality and real life. The book represents the author's indulgence in biography as a recreation.

While the work is biographical in nature, yet the other workers along the same line are discussed and the development of the knowledge along that line, as for instance respiration, is traced. Thus Harvey and the circulation of the blood, the physiology of digestion as understood in the seventeenth and eighteenth centuries, and Beaumont, Claude Bernard and the glycogenic function of the liver and vasomotor nerves, respiration from Boyle to Ben Franklin and Priestley, with depthlogisticated air and Lavoisier and oxygen, the nervous system, and the cell theory are chapters that give a wealth of information as well as an interesting story of the development of the science. Yet the facts are kept warm and pulsating with the personality, life and enthusiasm of the seekers for truth in this great and difficult field of human knowledge.—*E. B.*

THE COUNTRY DANCE BOOK, PART I. Containing a description of eighteen traditional dances collected in country villages. By *Cecil J. Sharp*. *Novello & Co.*, London and New York. Price —

In the past few years we have heard much about the folk dancing of the various nations on the continent of Europe. Nearly every country has made some contribution. It was thought that England had none to make, but through the efforts of Mr. Cecil J. Sharp, England has produced her full quota. In the Country Dance Books, Parts I and II, Mr. Sharp has given us eighteen traditional dances.

As dances to promote "grace of manner and dignified behavior between the sexes, and the art of moving easily and naturally and maintaining a fair presence and courtly bearing," they possibly have no equal. The dance material, steps, figures and notation in the book are clearly presented and easily discernible. They should be an integral part of the great dance movement which to-day is spreading over our land.—*L. C. S.*

THE COUNTRY DANCE BOOK, PART II. Containing thirty country dances from The English Dancing Master (1650-1686). Described by *Cecil J. Sharp*. Second edition, revised. *Novello & Co.*, London and New York, 1913. 125 pp. Price —

Part II contains thirty of the more difficult country dances from The English Dancing Master. The book is arranged similar to Part I containing the dance, the room, the steps, the figures and notation.—*L. C. S.*

COUNTRY DANCE TUNES. Sets I, II, III, IV. Collected and arranged by *Cecil J. Sharp*. *Novello & Co.*, London and New York.

Sets I and II contain the music for The Country Dance Book, Part I, and Sets III and IV, the music for The Country Dance Book, Part II.—*L. C. S.*

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JAMES HUFF MCCURDY, M.D., Editor

FOR

THE AMERICAN PHYSICAL EDUCATION ASSOCIATION

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FINANCING A PLAY SYSTEM.*

HENRY S. CURTIS, PH. D., OLIVET, MICH.

Cities and the people of the city will buy playgrounds on exactly the same basis that they will buy anything else. When it comes to spending money, we all come from Missouri and have to be shown. Since all public action here rests ultimately on the will of the people, the wise method is nearly the same, whether the money sought be in private pockets or in the city treasury.

The Need of a Plan.

Before any playground association or body of promoters can wisely go before a city and ask for an appropriation, it must have some plan of what is to be done. The council or commission probably will not have thought much about the subject and will have no very definite ideas of what is to be done if an appropriation is asked for playgrounds without any specifications. Probably that has been the greatest single weakness in the presentation of the movement in the various cities and it must be said also of most of the plans that have been prepared, that they have been lacking in imagination. It is quite as easy, in most cases, to raise privately or to secure an appropriation of ten thousand dollars on a ten thousand dollar plan, as it is to raise five hundred dollars on a five hundred dollar plan. To go before a city and ask for ten thousand dollars for playgrounds without any scheme for its expenditure, is asking the city to buy its playgrounds unsight and unseen, and repose unlimited confidence in the promoters. Because playgrounds are a good thing it does not follow that the plans of this or that playground association are wise or worth while. An unmanaged or badly managed playground is likely to be worse than no playground at all.

*From a forthcoming book. All rights reserved.

Who are the Promoters?

Perhaps the next most important element in securing an appropriation, in some ways more important than either of the others, is that the movement shall have the right people behind it—people who are acceptable to the administration, and people who have the confidence of the citizens. There are many people, especially ones who are not particularly interested, who seldom take the trouble to reason about a new movement, but judge of it mainly by the people who are promoting it. If the money is to be committed to the people who are asking the appropriation, their personnel is the only assurance that the city has that the money will not be misspent. To assign an appropriation for some worthy movement to many a zealous, but uninstructed and inefficient band of enthusiasts would be little better than throwing it to the wolves. Women are not as effective as men in securing appropriations from the city, as a rule, because, in general, they are not voters, because they are not apt to have political influence and because, rightly or wrongly, men usually have less confidence in the administrative ability of women. If the people who are promoting the appropriation are banded together into a permanent association, they are likely to carry more weight and to receive more consideration than if they are a temporary committee or an unorganized body of citizens. This organization should normally come before the facts are secured or the plan made.

Must Educate the People and the City Government.

Having a permanent organization, the necessary facts and a plan of action, the next move should be to educate the people to the need. Even though the objective point be the city treasury, it is always wise to make this appeal to the people. The city government will not often turn down anything that the people demand and for them to grant anything that the people do not demand may be unwise politically. If the appropriation is granted without the city government or the people knowing much about the movement that is to be supported, it is always a question whether it will do good or evil. If, on the other hand, the people of the city have once seen the vision, the ultimate success of the movement is assured, and it is never assured until that time. If the city grants the appropriation the previous campaign of education will help to make it successful and if the city does not grant the appropriation, the campaign has put the people into an attitude of mind to contribute liberally toward it. There are two chief ways of educating the public to a movement of this kind; one is through public addresses and the other through the press. The public address that is well reported secures both of these ends.

The Appeal to the City Council or Commission.

The promoters will usually be assured beforehand that no appropriation can be granted, but they should not be deterred by such information. It is worth while to go before the council even if it is certain that no appropriation can be granted. It helps to educate the council and gets them into a state of mind that makes a subsequent appropriation more likely, and it is an opportunity for good publicity that costs nothing. It also gives the most obvious reason for a personal canvass for funds later. It is always well to have the endorsement of important bodies, such as the Federated Women's Clubs, the Trades Unions and the Chamber of Commerce and to have each of these organizations send in a request, asking that the appropriation be made. It is well also to have a representative of each of these organizations at the hearing if possible, and there is usually no difficulty about this. If there is any reasonable expectation that the appropriation may be granted, it is usually wise to have some member of the council pledged beforehand to move to that effect and have someone else primed to second the motion. Appropriations are often granted after the playground association has been assured that no appropriation is possible. In order for this appeal to be most effective, it should be presented in the fall before all the money has been assigned to other things, though it is usually possible to get a small appropriation from the contingency fund or some other fund, at any time. Cities always have some means to meet emergencies. "Faint heart never won fair lady," or a new appropriation from a city council.

The Appeal to the School Board.

The majority of the play movement, so far as the children are concerned, undoubtedly belongs to the schools, and an appropriation should always be asked of them, but even if the entire movement is to be placed in the hands of the school board it is still wise to appeal to the council, as their support is apt to be necessary in order that the school board may get the money. Whatever has been said about the appeal to the council will apply, equally well to the appeal to the school board.

THE FINANCING OF A PLAY SYSTEM FROM PRIVATE SOURCES.

The playgrounds are becoming a public undertaking, but in the beginning they were nearly always a private undertaking. Probably the city authorities have taken the initiative in starting the movement in less than 2 per cent of our cities. The time of the private financing of a public movement of this sort will soon be past, but probably it will be necessary for a decade

yet in many American cities. I believe it is a good thing for the movement to be begun in this way, because it thus gathers around it the ones who are interested, and they feel responsible to see that it is not mismanaged. When the city takes the playground over, these people still follow it with interest and are not willing that the results of their efforts should be wasted by the incompetence or indifference of city officials.

As has been said, there is little difference in the general method whether funds are to be secured from public or private sources. In both cases, it is necessary to show the need of the city, to form a representative organization of the citizens, to formulate a plan of action and then to lay these matters before the people in such a convincing way that they will desire to see them carried out. The details, however, are very different in case the money has to be raised from private sources. A great variety of methods have been employed in the different cities.

Entertainments.

A common method in some places has been by holding entertainments of one kind or another. Where the entertainment is given by the playground children, so that it serves as a sort of exhibition of their work, in dramatics, folk dancing and athletics, it may be well worth while, as it serves at the same time as an exhibition for them and an entertainment to the public. But where it is gotten up by the playground association for the purpose, I believe that it will not be worth while. In the first place, the time and efforts are all out of proportion to the returns. In order to secure a "house," it will be necessary for the friends of the cause to sell the tickets, and the people who have bought a ticket will often feel that they have contributed to the cause and should not be asked again. When the returns have been counted, it will often be found that the profits do not amount to more than 10 per cent of the proceeds, and it would have been simpler for the performers themselves to have given the money outright. These shows have no value in educating the public to support the play movement, and not infrequently have led to a positive prejudice against it. If, on the other hand, some outside organization wishes to give an entertainment of some kind for the benefit of the playgrounds and the proposed entertainment is of an unobjectionable nature, it may be worth while, if the playground people are not expected to sell the tickets. Of all the entertainments that are being given, the society theatrical, that charges a high price for a seat, is probably the most successful, and perhaps the baseball game second.

Fairs.

Fairs are still more objectionable as a means of supporting the movement. They do nothing in the way of the education

of the public, are often felt as an imposition by everybody, and the returns are very small in comparison to the effort required. Often not more than 10 per cent, and sometimes considerably less than that, of the gross receipts will be profits. While this has not been true of all fairs, it can be said of them, in general, that they are wasteful and ineffective.

Tag Days.

So far as the writer is aware, tag days were first used as a means of raising money for playgrounds in Dallas, Texas. The day chosen for this first tag day was the twenty-ninth of February. The tags were handled by the federated women's clubs of the city, and they were called "leap year proposals." The women proposed that the men should support the playgrounds. It brought in some \$4500. The tag day in Philadelphia the next year netted about \$20,000, and tag days in Washington have brought in as much as \$8000 or \$9000. In most cities the tags have been handled by women or girls or else by the school children. I think there is no case on record where men have conducted a tag day. The prices have usually been indefinite, thus allowing anyone to contribute any sum he might choose from one cent up; but in Washington the first year, the lower limit was set at ten cents, allowing anyone to give any amount they chose above this amount. The second year when buttons were used, there was a different button for each contribution, ranging from ten cents to ten dollars.

Tag day is a fairly effective way of raising a sum not exceeding two or three cents per capita for the people of the city. It is an impossible method for raising fifty cents or a dollar per capita. It has certain decided advantages. The expense of running a tag day is very slight. It gets a large number of people to work. If it is only an occasional affair, and is done effectively, it begets a spirit of good will, a sort of carnival spirit of giving. The first year in Washington it was hard to find anyone on the streets anywhere without a tag. Everyone was jolly and familiar. The canvassers were seldom ever refused, and the whole city was led to talk about the playgrounds, as they had never done before. The tag was of plain manilla, with a green string to tie in the buttonhole. On it was printed, "I am tagged for the children of Washington," and at the bottom, "\$10,000 for the children's playgrounds." As an advertisement of the movement, and as a means of raising money in small amounts, tag day has few equals. It should be freely advertised in advance, so that everyone will know what is coming and what the purpose of it is. The easiest way is always to have the children do the canvassing, but there are also certain obvious objections to it.

The objections to tag day are quite as easily seen as its advantages, and during the last three or four years, it has not been quite *the mode* for charitable undertakings. The first objection that is raised is that it is a sort of hold-up. A person cannot well refuse to purchase a tag of a woman on the street, and, if he does, he makes himself conspicuous by the absence of the tag. If he purchases the tag and puts it in his buttonhole, he also makes himself conspicuous and seems to label himself like a package of goods, which is scarcely good taste. If the tags sell for the same price, they do not secure contributions from the public in accordance with their ability or interest. If they sell for graded prices, they serve to distinguish on the street the giver of a dollar from the giver of ten cents, which very nearly penalizes the small giver. If the tags sell for anything that the person may care to give, there is great danger, especially if the tags are handled by children, that not all of the money will be turned in. Tag day, in general, undoubtedly tends to promote general giving and to discourage large giving. It is peculiarly applicable in a community of working people.

There are two serious charges that have been made against it: The first is that it leads girls into familiarity with men on the streets, which is socially dangerous, and the other is that it teaches the children to steal, through the uncertainty of the amount received for the tag. These objections will be answered by not employing girls in the canvass, and by having all boys work under a teacher, who will serve as a foreman. In Washington, we had the teachers select six boys who wanted to work and whom they felt were entirely trustworthy, from each of the upper grades in the schools. These children were sent out two and two with a bank between them, and the people were asked to put the money directly into the bank rather than give it to the children. A teacher was in charge of the boys who were canvassing in a certain locality. The women took charge of the hotels and clubs. Undoubtedly a tag day that is conducted by the women is the least objectionable.

Another strong objection that has been made against tag day, and this is the one that has created the sentiment against it in charitable circles, is that it is unfair to the other charities. Tag day is a drag net that takes in everyone, and the next charity that comes along finds the floor swept and garnished. If the other charities attempt also to hold tag days, they become a nuisance and the public is prejudiced against charity itself. The most dignified and successful tag day that has been carried on in this country, I believe, is the one conducted by the federated women's clubs of Dallas, Texas. It has been carried on ever since the first year by the women themselves. It is for five different charities and nets about \$5000. It has become a regular

institution in the city. The women are very resourceful and capable women. The inaugural address of the club president in 1913 was largely a eulogy of tag day and what it has enabled the women to do for the city. I doubt if any other women's club in the country has done more.

If the precautions that have been mentioned about using children, and especially girls, are observed, in a city where there is a large laboring population and few large givers, tag day may be a very effective means of enlisting a general interest and support. It is certainly one of the best advertisements that a movement can have. It should not, however, be used, as it seems to me, for a movement that does not have a general appeal, as for the orphans' home, which should be supported, if supported at all, by a limited clientele, but may more justly be used for the playgrounds than most movements, because the playgrounds are for all the children. The button is probably better than the tag.

The House and Store Tag.

While I was in Washington, we invented a tag for the house and another for the store. It was a large tag, ten by fourteen inches in size, on which was printed, "This house (store) is tagged for the children of Washington," and on the bottom, "\$10,000 for the children's playgrounds." This tag was hung on the doorknobs or in the windows of the houses and set in the windows of the stores. The uniform price of one dollar was charged for each store tag, but some merchants took as many as two hundred. For the house tags the price was fifty cents and up. The business tags were handled by the merchants, the house tags by the women. There were very few refusals, and the number disposed of was limited almost entirely by the number of people available to handle the tags. It is believed that this tag eliminated most of the objectionable features of tag day. It is handled entirely by adults, and the business tag by business men to business men. No women are asked to stand on the street corner and dispense tags to strange men. The women do not find it objectionable to go around to the houses, and after the interest is once aroused, the people are glad to put a tag in nearly every window. In different cities, different inscriptions have been put on these tags. It offers a wonderful opportunity for free advertising, which will set the whole town to talking about the movement at once. It is far more effective than any sort of newspaper publicity in getting the movement before the people. The store tag serves to advertise the public spirit of the storekeeper, and is probably worth nearly as much to him as it costs him. The people will be found to pay close attention to where the tags are placed, and to remark on the public spirit or the absence of it in the owners. In London,

Ont., we used the following tag for the houses: "GOOD CITIZENSHIP PLEDGE. This house is interested in the welfare of the children of London. It will help to support the children's playgrounds. Membership receipt in the London Playground and Recreation Association." This tag was printed in black on a green card and was rather of a decoration to a window than otherwise. The house tag is a fairly effective method of raising money and it is one of the most effective methods that has been devised for advertising the movement. It serves in the latter case also to point out the fact that good citizenship denotes a willingness to contribute and to work for the public good, a fact which is not always realized, for to many good citizenship is a neutral idea, meaning merely that the person is law abiding and honest.

The Begging Letter.

One of the simplest and cheapest ways of collecting money is the process letter. The usual method is to make up a list of the people of the city who are able to give, or who have been accustomed to give to other charitable undertakings and to send to these people a letter, stating the needs of the work and asking for a contribution. This letter is sometimes signed in person, but more often by process with a facsimile signature of the president or the finance committee or whomever seem to be the strategic ones to sign. The top is filled in on the typewriter and except for its perfect execution the letter seems to everyone a personal typewritten letter. It is customary to enclose a return envelope for a check. This letter is often followed a little later by another letter a little more personal in tone, or perhaps by a few actual personal letters. Many national movements of a social nature are supported in this way. The process letter, although filled in on the typewriter, may be mailed from the post office unsealed on a one cent stamp, but it may be a question if it is wise to do this, as letters under a penny stamp are apt to be classed as advertising matter and to receive scant attention from busy people. The process letter that is effective in securing funds, is nearly always effective, also, in educating the public to the movement, and may be worth its cost, as propaganda, quite apart from any money that may be paid in as the result of it.

Memberships in the Playground Association.

Another legitimate source of income are the memberships in the playground association. These are usually of different amounts, but the common active membership is usually one dollar. Dollar memberships will not support an association financially in its work, but they serve to give it a wide constitu-

ency and thus assure it a large moral support. These memberships amounted to from \$2000 to \$5000 a year in Washington, and have been a considerable sum in a number of cities. In Baltimore there was an effort to secure a very large membership at one time by a systematic canvass of the town for that purpose. Logically it would seem as though the private work of a playground association should be supported in this way, and that may well be the case after the first year. These memberships are usually secured through personal or process letters, though it is the custom to consider all contributors to the movement, in whatever way the gifts may be made, as members. These memberships ought to be a permanent fund for experimentation and promotion of the idea in the city.

The Paid Canvasser.

Canvassing for money is much like canvassing for a book. There is a certain knack and skill involved. Some are very successful canvassers, while others show very small results. In general, however, it is better to do the work through volunteer canvassers than through paid ones, because the ones who have the influence and position to be effective cannot be hired, because the canvassing convinces those who canvass and makes them staunch supporters of the movement, and because the public feels that, if an association wishes their money, it should be enough interested to come out and ask for it. The mere fact that the canvasser is paid tends to discourage giving. This is not so much, if at all, true in national movements.

The Mass Meeting.

One of the most effective methods of raising money is a mass meeting. If the right people come out, and a skillful person is in charge, it is often possible to raise several thousand dollars in a few minutes. In a meeting of this kind there should be a clear and convincing presentation of the objects to be attained and there should be an effort to arouse enthusiasm to the point of action. The great difficulty is that most mass meetings for philanthropic purposes are apt to be lacking in mass and also in the personnel of those who are able to give. But where the people come out and a skillful person is in charge, a large amount of money may be raised in a very short time.

The Personal Canvass.

The most effective way to secure money or concessions or anything else is always the personal canvass. Probably the short-term building campaign used by the Y. M. C. A. in erecting its new buildings is the most effective financial canvass thus

far devised. A letter never receives the same attention that a personal word does and again the personal word receives weight in proportion to the importance of the canvasser, the personal attitude of the prospective giver toward him and the knowledge of the canvasser of the things to be done. The first thing that is needed here, as in all other methods of raising money, is a clear idea of what is to be done, that the public may not be asked to give to some indefinite purpose. Before the campaign is actually begun, a list of several hundred names should be made up, and one or two large preliminary subscriptions should be secured if possible. It is often well to launch the movement at a banquet and secure there the agreement of representative men to go out on the canvass. If the banquet is decided on, there should be a determined effort to see both that the right people are there and that there are speakers who are fitted to awaken the necessary enthusiasm. The members of the association must grow so enthusiastic that it will become contagious.

It will seldom be possible to have the thorough organization and large number of canvassers that are drafted into a Y. M. C. A. campaign, but it should be possible to get a few public-spirited citizens to subscribe generously, and to go with members of the association to see other public-spirited men of large means. A man who has himself given largely is always the most effective canvasser for a movement, and a man who has not himself made a contribution will find his work very difficult. Also the size of the contribution will be largely determined by the weight and standing of the citizen who goes to the prospective giver. Men are usually ashamed to make a small contribution to an influential and wealthy person. It is said that when they wish to raise a large amount at the Biltmore Church, they ask Mr. Vanderbilt to pass the plate. It is always an advantage for two or three canvassers to go together, as this helps to keep up courage and puts the canvassers in the majority. So far as possible, men should see others of the same set to which they belong. It may be only the influential citizen who can gain access to certain large financiers, and wealthy men often depend on the judgment of certain others in philanthropic affairs. The canvassers should arrange, so far as possible, to take luncheon together each day. This serves to keep up courage and stir emulation. People usually dread to solicit, but nearly everyone who has been out in this way with two or three others has found the work both easy and pleasant. The returns should be published in the papers each day, and there should be an effort to clear off all the large givers during the first two or three days. This leaves the coast free for other methods with the small givers and it is also much more effective. A city cannot be kept at the point of enthusiasm very long. When

the proper degree of enthusiasm is reached through the press and public addresses, that is the time to secure the funds, and any delay will mean decreased returns. The shorter the time of the canvass, the greater the enthusiasm and the more successful it is likely to be.

Canvassing Teams.

It is sometimes wise to have canvassing teams and to stimulate rivalry among them. Also a rivalry between different professions, as lawyers and doctors, may be worth while. It is very desirable that there should be on each canvassing committee someone who knows about the work and who can answer questions and criticisms.

There is often a tendency to put this work on committees of women, but this is not to be advised except for the small amounts. Men do not, as a rule, give as largely to women as to men. Women are usually more timid about asking for large sums, and they will often secure a subscription of ten dollars from a man who should have given a hundred, and who would have given a hundred if the right man had gone to him. However, the number of willing canvassers is often limited, and it is necessary to use the material that is at hand.

The Canvass for a Particular Playground.

Everyone feels to-day that the playgrounds should be supported by the public, that it is something of an imposition to ask for them to be supported by contributions. In actual fact, of course, it does not cost any more to support them in the one way than it does in the other, if the contributions can only be equally well distributed. The one case where this comes very near being true is where a school playground is started and the patrons of the school are secured to stand the expense. All through the South, all sorts of things are constantly being purchased for the schools in this way, from stereopticons to playground equipment. If a subscription can be started at a good-sized meeting of the school patrons or if a committee can be got to call on the patrons of any school, the money can usually be secured for the equipment and maintenance of the playground with very little trouble.

Entertainments and Contributions by School Children.

The entertainment that is given by the playground association usually will not be worth while. On the other hand, the entertainment that is given by a school to raise money for a playground for the school is nearly always worth while. Our public schools have too few social occasions, and anything that brings

the parents, teachers and pupils together in a social way is likely to be valuable. The spirit of this age that is coming in is a spirit of service. Almost the only way that children can be trained in this spirit is by doing something for the common welfare. The one thing which they are likely to appreciate most is providing play facilities for the school. This may not seem very unselfish, but it is not individual selfishness at any rate, and it is the easiest way out from a selfishness that is purely individual. The school grounds of Indianapolis were first equipped in this way.

Besides the entertainments, we were accustomed in Washington to distribute to all of the children small, brown envelopes on which was written, "Contributions for School Playgrounds." These the children took home and brought back on a designated day, either with a contribution or without, as they or their parents determined. We used to receive from \$1000 to \$4000 a year from this source, and more than half of all the school playgrounds of Washington were equipped in one or the other of these two ways. The children are more loyal to a playground when they have helped to create it.

Contributions of Time, Service and Equipment.

It is oftentimes much easier to get contributions of time, service or equipment than it is of money. In some cities, in the beginning, a full corps of directors has volunteered to serve without pay. At some of the playgrounds in Washington, besides the paid director, we had as many as five or six volunteer workers. The merchants freely contributed almost anything we asked for in the way of toys, balls, bats or other equipment.

In St. Louis, in the beginning, the carpenters' union built the playground houses and the plasterers plastered them free of cost. The mothers in the neighborhood of some of the playgrounds volunteered to wash the towels for the baths. The labor unions are nearly always willing to contribute service, if they are approached on the matter. This is always advisable, as it not only saves money, but it secures their general coöperation and political support. In return, they are apt to demand that the work on the playgrounds shall be done by union men, so far as it is union work.

When the playgrounds were first begun in Minneapolis, the merchants, lumbermen and contractors contributed nearly everything that was needed for the equipment of the playgrounds.

In Pittsburgh and St. Louis free transportation was furnished the playground children to contests and on excursions by the street car companies.

In Pittsburgh, they have a flower day once a week on which bouquets are presented to every child. These were contributed

by the florists and by individuals from their own private flower beds.

Contributions of Playgrounds, Field Houses or Swimming Pools.

From fifteen to seventy playgrounds and a number of field houses and swimming pools are being given by private individuals to our cities each year. More and more the current of public giving is being accelerated and more and more it is turning into social channels. There are apt to be in each city certain individuals who like to be public benefactors. Either a playground, a field house or a swimming pool will make a worthy memorial that will be much more decorative and quite as useful as a tombstone. And there are apt to be one or more individuals in every city who will be glad to make such a gift, if the matter is once brought to their attention. Any of these gifts have a popular appeal that few other gifts may have.

Publicity.

In order to keep up the enthusiasm and to give the public the knowledge that is needed for any wise giving, it is necessary to arrange for full publicity, both of the progress of the campaign and of the facts affecting its success. In a good many cases, regular publicity men are employed. In the campaigns of the Y. M. C. A. certain men often go from city to city, following the different campaigns. They thus become expert in this especial kind of news and are able to discriminate as to what is important and to handle the press with very little coaching. So far as possible, editors of all papers should be seen by a representative group of people before the campaign is begun and their interest and coöperation enlisted. They are usually willing to coöperate and will often publish the news on the front page. If no good publicity man is available or funds are scarce, it is generally best for some member of the association to prepare the material for the papers himself, for the reason that the ordinary reporter does not understand what is really important, and often fills much space with what has very little value for the movement, and which may do positive harm by distracting the attention from the essential things. It is never difficult at the present time either to get the publicity that is needed or to raise the necessary funds, if a few influential people will give a few days to it.

Results of the Campaign.

I am inclined to think that a money raising campaign for the playgrounds is one of the best things that can happen to the movement. It always brings the play question forcibly before

the people, and those who have given are always more interested afterwards. A campaign or two of this kind is sure also to convert the city to the policy of public support, in part from mere self-defense from personal giving. The canvassing always convinces the canvassers. The people who have given their time and money demand efficiency afterwards, both from the association and the city. It is often one of the worst things that can happen to the movement to have the city take it over in the beginning without any vital appreciation of its real significance. The financial campaign always secures many new members to the association. Ofttimes it should be the policy to reorganize the association at the end of the campaign, in order to put into positions of trust those who have shown an interest and to drop out the dead timber. The gain in interest and personnel from a financial campaign should be at least as great as the financial gain.

OBSERVATIONS ON PHYSICAL EDUCATION IN GERMANY.

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Evidences of New Interest in Sports in Germany.

I got caught almost at once on entering Germany by the idea that Germany is learning or relearning to play. I had strayed into a village inn on the Rhine, not far from the Lorelei rock, and there I could not help overhearing an animated football discussion. . . . I thus learned of the existence of a local football club and of clubs in the neighborhood; I gathered that a series of games had been arranged for; I heard the English words "fair play"; I inferred that the type of game played was soccer and also that the membership of the clubs was recruited from the population at large and had no school connection. Now, while listening, I could not but ask myself, "Is this interest in football an illustration of a general movement?"

The very next day I had occasion to ask the same question in another form. Aboard the Rhine steamer I fell in with a party of be-knapsacked boys from Frankfort, who, as their leader, a Frankfort teacher, told me, were returning from a three weeks' tramp. Here was primarily, of course, only an example of a truly native sport. There has always been enough wanderlust to set thousands of German legs in motion. But the thought-provoking feature of this expedition was that, as I was told, a body of Frankfort citizens had supplied the funds.

By the time I reached Munich I was pretty well convinced that during the past decade Germany has made herself over as far as practical interest in sport, native or naturalized, is concerned. In Munich the most casual observation furnished ample corroborative evidence. Below my window extended a tennis court for the use of a select assortment of Bavarian princes, who zestfully smashed tennis balls if not tennis records. . . .

More and better corroborative evidence was afforded by the shop windows of special stores for the sale of sporting paraphernalia, with their display of bats and balls, hockey and golf sticks, tennis rackets and bobsleighs, skates and skis. A rich variety of supplies for manifold demands. Then there was the obvious popularity of skiing as a winter sport. For weeks special trains, crowded to their full capacity, were run to various mountain stations, and on them skis, ski-ers and ski-eresses were on the

*Read at the Annual Convention of the Physical Education Association of the Pacific Coast, July, 1914.

right of you and on the left of you. Nor were the Munichians alone represented. Even far-away Berlin had sent some devotees. But the strongest impression was made on me by the number of football games that took place in Munich during my stay. The series of Meisterschaftspiele, championship games, seemed endless. For months the Munich papers announced a game or two a week, without, by the way, giving more than five or six lines to any one. Bavaria, I came to know, had become dotted all over with football clubs, tied together into sectional leagues.

This phenomenon aroused my statistical curiosity and I found that the total number of professed football players in Germany had come to exceed 100,000. From the same fairly authentic source I learned that the ski associations had a membership of more than 30,000, the golf clubs about 5000, the hockey and tennis leagues over 60,000, the water sport organizations about the same number, that the troops of general field athletes totaled 175,000, and that nearly 1,200,000 men and women were active members of the indigenous turnvereins. Altogether the organizations practicing and promoting self-education for physical efficiency had a membership of over 2,000,000. In this estimate were not included the thousands that belonged to the Wandervogel, a national union of pedestrians inspired by the wanderlust and allied emotions.

Causes of the New Interest.

I am unable, of course, on the basis of stray observations, to give a scientific interpretation of the new taste Germany is acquiring. One factor in the process is undoubtedly the imitative love of Germans for things foreign, coupled with the desire to do as the world is doing. Another is the instinct of self-preservation stirred into action by the destructive conditions of present-day life and labor. Accelerating causes are the Olympic games scheduled for 1916 at the capital as well as the approving attitude of the emperor. Not a factor, at least, not as yet, is the athlete—his name is legion in America—who has his playing done for him by hired men. Interest in sport is not, as yet, confounded with craving for seeing a contest. As yet, the "play is the thing," not the winning, and if the spectator-athlete should tend to shift the emphasis, the powers that be would be likely to post the notice: *Es ist verboten* to sit on the bleachers; or rooting *wird streng bestraft* (subject to a heavy penalty). Considerable shaping influence must be ascribed to the currents of ideas, set going by modern science, concerning the meaning of physical efficiency for the individual and nation. To proceed by taking thought first and then action, slowly but persistently until the joys of acquired second nature are reached, is rather characteristic of the German psyche or temperament. At all events, the

German interest in sport has not, like Topsy, "just growed"; it cannot be detached from the fostering influence of leaders in physical education. But most potent generally is the patriotic motive. I do not mean to say that German boys and girls and young men and young women play with the Vaterland and the Wacht am Rhein constantly on their minds. But they are not expected to forget what their physical efficiency means to their country. Moreover, the taking of honors at Olympiads by a few specialists is no mark of national vigor. Hence, if Germania is to be first in war and first in peace, she must be first in the heart of as many able-bodied countrymen as possible.

Now, in the larger view, the physical education movement, as far as the sport aspect is concerned, has followed the line of least resistance. As for other aspects, such as favorable environment for the natural processes of growth, playgrounds and supervised play, and the practical inclusion of psycho-motor training among the activities of the school, practice is probably not catching up with theory as fast as it is with us. There are more and higher hurdles to jump; among them, cost, traditions and rigidity of established institutions. Hence, the secondary schools are still largely and one-sidedly intellectualistic. The play impulses of adolescence are only beginning to be utilized. The problem of how to keep inter-school contests under educational control has not arisen thus far. There are no such contests as yet. At the universities, the custom-caked forms of life, most of them bad, offer a passive resistance not easily overcome, although a lover of outdoor sport need not now feel as lonesome as I did twenty-eight years ago. It denotes a new attitude, however, at any rate on the part of university authorities, when a playground is bought for university students as was done in Munich last year, and a director of gymnastics and games appointed. This step included an offer to pay out of university funds to every student joining a turnverein one fourth of the annual fee.

The old order changeth and new occasions teach new duties. . . . German greatness rests to a great extent upon the educational system founded by von Steun and Wilhelm von Humboldt. On the other hand, the contemporary faith and work of the father of German gymnastics, who sought to make physical education a means of national regeneration, . . . Turnvater Jahn, is coming into his own, and he builded better than he knew. . . . Physical education, in the modern scientific sense, is bound to be incorporated in German schools and life as it already is in theory. It is fast becoming a hot spot in the national consciousness and so an integral element in the ardent ambition of statesmen, educators, etc., to secure for Germany the greatest efficiency of the greatest number, the potential efficiency of being and the actualized efficiency of doing.

The Theory of Education in which Physical Education Finds its Proper Place.

To me one of the most meaningful signs of a new era was the open-air festival and convention of young and youthful Germans, held in October, 1913, on a mountain top near Cassel. Here were assembled representatives of many societies and all parts of the empire. Most of the delegates represented student organizations, among them the student league of total abstainers. In general the congress might have been described as a meeting of the National Education Association, with no teachers present as such. Its uniting general purpose was to promote ideals worthy of German youth at its best and the creation of personal, social and ethical forms of behavior in harmony with those ideals. The keynote of the discussion, not always clearly struck, of course, was not *reform* but *reform*. Hence, of course, insistence on such re-shaping of school and custom as will meet the needs of adolescence. Many winds of doctrine passed over that mountain top near Cassel. Some of them were nothing more than hot air. But if one were to interpret and formulate, the resulting philosophy of education might be stated thus:

1. In the last analysis there is only one vocation, that of becoming stage by stage dynamically human under the vocational guidance of science, art and nature, ethics and religion. The one and only master career is Life, each period of which is both fulfillment and preparation.

2. But progress in making a life normally presupposes training for making a living. It always implies a calling as a means of grace and growth. And lest the calling mar the vocation of being human, it must be raised, if possible, to the level of intelligent, prideful, creative mastery.

3. But progress in the career of life implies another necessary means or sub-calling—citizenship. The man without a country cannot be a man. There is a sense in which the jingo caricature of patriotism—my country right or wrong, my country—is not a caricature. The capital we-feeling, the capital we-thinking, the capital we-willing and doing, the team work for the common good,—are of the essence of life as a successful career.

From the national point of view, therefore, the ideal of the greatest efficiency of the greatest number means the greatest number plying successfully the vocation of being dynamically human with the aid of a mastered calling and habitual loyalty.

4. But progress in the career of life, of the single life and of the life of all, progress towards the greatest efficiency of the greatest number, implies a third necessary means, or sub-calling, that of making the most of the physical side of the human psycho-physical organism. This means the maintenance and development of the best possible bodily life and then so much

more than that. Physical education becomes indispensable to the socializing processes of training for efficient citizenship, indispensable in the mastery of a calling, indispensable in furthering the business of making a life through the true, the beautiful, the good, indispensable in making the greatest efficiency of the greatest number mean also the greatest happiness of the greatest number.

Of course no such body of doctrine as I have given was actually presented. But the drift and spirit were there, the recognition of the needs of forms of life more adequate to youth, the demand for more elbow-room, for better opportunities to grow through play. This spirit naturally welcomes all that is implied in physical education and makes propaganda easier. Given the goal and the will to make it and the discipline to make it, the chances are that Germany will "arrive" in physical education as she has arrived in scholarship, in commerce, agriculture and the industries, and very likely will not arrive last.

NEW YORK CIVIL SERVICE EXAMINATION FOR FEMALE PLAYGROUND ATTENDANT.

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APPLICATIONS.

Applications for the position of female playground and gymnasium attendant were received by the New York Municipal Civil Service Commission from October 16, 1913, to October 30, 1913. They were received in the autumn of the year after the students had completed their registration at the various universities, colleges and schools for the professional training of teachers, in order that these students, many of whom are highly qualified for service as playground attendants and many of whom seek such employment, might have an opportunity to compete in the examination. The receipt of applications in the autumn also gave the examining bureau of the commission ample time to hold the medical, the practical and the written tests and have the eligible list ready for certification at the opening of the playground season in June of the following year. Applications were received only from those who were citizens of the United States and residents of the state of New York.

SUBJECTS.

The subjects of the examination for the position of female playground and gymnasium attendant were as follows: A qualifying physical examination; a practical test in playground work having a weight of two points out of ten, and in which each candidate was required to receive a rating of at least 70 per cent; a paper of questions on the duties of the position to which each candidate was required to submit answers in writing on the day of the examination, which had a weight of six points out of ten, and on which each candidate was required to obtain a minimum rating of 70 per cent; and questions relating to the candidate's education and experience, having a weight of two points out of ten. To obtain a place on the eligible list a general average of 70 per cent was required on all the subjects of the examination.

EXPERIENCE.

An experience blank was issued with each application and was to be filed with the commission at the time of filing the application. On this experience paper each candidate was required to

give a detailed account of her education and her record of previous employment. The questions on this paper called for a statement of the candidate's age, a statement of the educational institutions attended by her, together with the dates of attendance, the course of study pursued, and the degree or diploma received; a statement of the technical education received by the candidate tending to qualify her for a trade, vocation, calling, or profession; a brief statement of the candidate's employment from the time she began to work up to five years ago; a detailed statement of the candidate's occupation during each of the last five years, naming the occupation, the name and the address of the employer, the business of the employer, the cause of the candidate's leaving, a description of the nature of the duties, and the hours of her employment, and a statement of any other facts, not opinions, which would tend to qualify the candidate for the position of female gymnasium attendant. The answers to all the questions on this experience blank were given by the candidate under oath.

The experience papers of all the candidates in the examination were rated independently by two examiners upon a competitive basis, and the average of these two ratings constituted the mark attached to each candidate's experience paper. Those elements of the candidate's training which were of the most value in tending to fit her for the position of playground attendant, as, for example, attendance at a normal school of physical training, were given the highest rating. Similarly those elements of each candidate's record of previous employment which tended to fit her for the position were given the highest rating, as, for example, experience in teaching or in dealing with girls in social work. The other elements of each candidate's education and record of previous employment were given such lower ratings, by the examiners, as their smaller relative value in tending to fit the applicant for the position of playground attendant justified.

PHYSICAL EXAMINATION.

The physical examination consisted of two parts, a medical physical examination and tests of strength and agility. In the medical physical examination the candidates were given a test of vision, to pass which required the reading of Snellen 20/20 test types. Hearing was tested. Hearts were examined with the stethoscope applied to the naked chest. The candidates were inspected for evidence of nervous disease, defects of the circulatory apparatus, deformities, glandular swellings, stiff joints, extreme knock-knee and bow-legs, missing joints, skin diseases, contagious diseases, goiter, exophthalmos and abnormalities of respiration. Defects of gait and muscular coordination were also examined for. The bared legs and feet were examined for evi-

dences of defective circulation, edema, varicose veins, ulcers, eczema, bunions, deformities of toes, flat-foot, everted foot and atrophy of muscles. The physical examination also took cognizance of fingers and ears encumbered with conspicuous jewelry.

Only the candidates who passed the medical physical examination were given the tests of strength and agility. Candidates had been instructed to bring gymnasium or bathing suits and sneakers.

The test consisted of lifting a twenty-five pound dumb-bell with the right and with the left hand successively; holding one's self suspended and chinning on the horizontal bar; raising the trunk to a sitting position from the supine position; jumping to position on the horizontal bars with the arms straight and the elbows unbent; and a running low jump of two and a half feet. All of the physical examinations were conducted with the assistance of a woman examiner.

PRACTICAL TEST.

Only those candidates who succeeded in passing the physical examination were admitted to the practical test, which was held on a subsequent day and which had a weight of two points out of ten. The practical test consisted of three parts, each of which had equal weight. The examiners rated the personal proficiency, the teaching ability and the general fitness of each candidate on a competitive scale. The candidates were required to march, to execute a calisthenic drill, to dance, to run and to pass a basket ball, for their rating in personal proficiency. Each candidate, in her turn, was next required to teach the other candidates of her group a singing game, a dance, a running game and a ball game. During the candidates' entire practical examination the examiners observed their work critically, with a view to determining their general fitness, such elements as personality, carriage, dress, voice, manner, executive ability, etc., being rated under this head. Expert examiners well known in the field of playground work were especially employed by the commission to conduct this practical test in conjunction with a member of the regular examining staff.

WRITTEN EXAMINATION.

Only those candidates who succeeded in passing both the physical examination and the practical examination were admitted to the written examination, which was held at a later date. The written examination, which had a weight of six points out of ten, consisted of a single paper of ten questions of which the following is a copy. The examination began at ten o'clock and closed at two-thirty, no recess being allowed.

Questions of Written Examination.

1. (a) State the considerations that should determine the suitability of games to be played on a playground.
(b) What is meant by a "quiet game"? Give three examples. Describe one of those you mention.
2. (a) Name the types of games that generally appeal to children about the age of six and tell why. Mention five such games.
(b) Mention five ball games for girls exclusive of basket ball. Describe any one of those you mention.
3. (a) Name the elements that make "folk dances" most suitable for playground.
(b) Name ten folk dances suitable for playground or green, indicating those best fitted for small children and those for the larger girls.
4. Describe two folk dances, one suitable for small children and the other for the larger girls, mentioning, in each case, formation, steps, measure, etc.
5. Discuss the relation of the playground to surrounding social conditions from the standpoint of a play leader.
6. (a) Name the elements you would make use of or aids you would resort to in establishing discipline among those who use a playground.
(b) Assuming that punishment is to be considered as a help in maintaining such discipline, what form or forms should it take?
7. Enumerate and describe in detail the forms of recreation you would provide for the small children who frequent a playground.
8. (a) What do you understand by the term "unorganized play"?
(b) State any objection that might be made to carrying on "unorganized play" among all classes of children.
(c) Name the types of stories that would be appropriate for recital to children by the play leader.
(d) What time would you set apart for such story-telling?
9. (a) Discuss the value of festivals in playground work.
(b) Name some types of festivals for the children who attend playgrounds.
10. (a) Suggest any rules regarding the use of apparatus by small children that might tend to minimize the possibility of accident.
(b) Describe the manner in which you would treat the following cases in an emergency: Cut on the head, broken arm, cinder or dirt in the eye, prostration by heat.

STATISTICS.

Number of applications filed and candidates summoned for physical examination, 256.

Number who passed physical examination and were summoned for practical examination, 126.

Number who passed practical examination and were summoned for written examination, 91.

Number who passed written examination and were placed on eligible list, 39.

Number who have secured appointment from eligible list, 34.

THE DEMONSTRATION PLAY SCHOOL OF 1913.*

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I. THEORY OF THE ORGANIZATION OF THE PLAY SCHOOL.

A. The Idea Summarized, with Comments.

The play school is a school organization with its program of activities and methods based on the central idea of uniting the spontaneous play-life of the child, who needs and desires leadership, with society's demand that he be instructed. It is an effort to solve the problems of elementary education by harmonizing the child's extra-home educational experiences through combining, in one institution, the functions of the play-center and the functions of the school; hence the term "Play School."

Further, the plan correlates, through a simple administrable grouping of the child's natural activities, and through an expansion of the idea of leadership, many of the apparently divergent ideals and methods in modern education which began with Rousseau and, stimulated by recent profound social changes, have resulted in great educational restlessness and experimentation.

For the little children, the plan absorbs naturally what is sound in the results of educational experience since Froebel's time and extends the process to the tender years of infancy. For the larger children, it brings together in a practical school scheme, and extends down the scale of years, the valuable results and the ideals that initiated them in many recent educational efforts, namely, the "outdoor school," the vacation school, gardening, manual training, organized excursions, camps, activities of the Boy Scouts and Camp Fire Girls, "training for citizenship," intensive individual development, etc.

The plan correlates and gives a balanced relationship between physical education, moral education and cultural education. It lays the real foundation for vocational training and guidance. Above all, it establishes in school practice one of the more recent educational discoveries: the necessity of leadership in play from

*A report to Professor Charles H. Rieher, Dean of the Summer Session of the University of California, on the Demonstration Play School conducted during the Summer Session of 1913. The part of the report explaining the theory of the play school and describing its activities is an amplification of the brief outline submitted to Dean Rieher in the winter of 1912. The first draft of this report was submitted to several educators for criticism, and the author is especially indebted to Dr. E. C. Elliott, of the University of Wisconsin, President E. C. Stanford, of Clark College, Dr. C. E. Rugh, of the University of California, and Professor M. V. O'Shea, University of Wisconsin. Reprinted by permission of Dean Rieher.

This demonstration was also conducted in 1914, and will be conducted during 1915 at the same place.

infancy to maturity and the educational superiority of leadership in play to instruction in work. It bridges the gap between play and work.

Therefore the play school may be defined as an outdoor school and play-center combined, where the teacher's interest is centered in the children and their activities, not merely in subjects of study, where the educational efforts, including the moral and social, are put on a basis of practical living experience radiating into the whole environment, and where children are considered both as free active agents and as immature social creatures requiring aid, social control and discipline. Instead of teaching subjects, it organizes activities out of which subjects develop, as they have in racial history. The activities organized are the natural, more or less distinct phases of the child's complete life. The usual school subjects develop as phases of these activities.

In spite of the inclusiveness of this ideal, the play school plan as presented is not considered an invulnerable or perfected solution of the elementary school problem. No school scheme can be perfect so long as something is to be learned about child nature, or so long as society progresses, and no individual can present a perfect solution. That is a race problem. But the plan seems to meet in general the fundamental test of flexibility for progress with every advance in knowledge of child nature, education or social need. Again, the plan is not presented in a spirit of antagonism toward the public school, but just the reverse. The widespread discontent with the public school is recognized and my idea of the cause of this discontent is expressed. The plan proposes a step in organization and method that will make modern ideals and tendencies consistent and efficient in educational results and that will command the sympathy and support of the more progressive and intelligent parents and teachers. This sympathy and support are essential if the public school is to fulfill its functions.

The play school is not even presented as something entirely new. The scheme of organization and interpretation of activities are new, at least in form; and the extent of application of the idea of leadership and the degree of fusion of the functions of the child's play-center and the school are new in emphasis. Yet the educational efficiency of the activities has been demonstrated in numerous schools, in modern playgrounds and in boys' and girls' organizations. The whole idea has been approximated in many private efforts and in a few public schools. The convergence towards a fusion of the school and play-center is seen, on the one hand, in the tendency of the school to organize the play-life of the child, well illustrated at Gary, Indiana, and, on the other hand, in the tendency of the best year-round playgrounds to organize activities that are usually considered school functions.

My own ideas* have been the product, first of reform-school work and then of intimate contact with the educational results of the lower schools through years of college teaching and experience in organizing play and recreation.

While the essential elements in the theory of the play school, namely, the identification of play with spontaneous living, and education with the process of living—both controlled by social conditions and depending in results on leadership—are as sound for the organization of secondary and higher education and even the molding of adult sentiments and customs, as for the organization of the education of infants and children, yet this report is confined to the latter problem, because it is fundamental to the rest and because the problems of organizing activities and leadership are quite different after the capacity to work has been established.

B. Divisions of the Report.

An interpretation of the general theory of the play school, a description and explanation of its activities are given in divisions C and D, and conclusions concerning the demonstration of the summer of 1913 are given in part two of this report.

C. Influences Determining the Organization of the Elementary School.

The school as a social institution and the school process, typified by the curriculum, require a perpetual *reinterpretation and reorganization corresponding to advancing knowledge of child nature on the one hand, and the demands of social progress on the other*. Since the play school is a reinterpretation, it must be treated from both these standpoints.

1. CHILD LIFE AND THE EDUCATIONAL PROCESS.

A larger interpretation of the child's nature, especially in his play-life, must be based on the fact that he is not merely a reflex mechanism responding to external stimuli, but a spontaneously active creature, driven by internal needs and hungers that are fundamental springs of conduct. Hungering for activity, experience and expression, he develops his organic, nervous, emotional and intellectual powers in the process of gaining adjustment.

*I first formulated the Play School scheme as a school for subnormal children after two years' work in a juvenile reformatory and presented it in 1899 while a Fellow in Clark University to G. Stanley Hall. Dr. Hall urged at that time the organization of such a school in Boston, but it could not be financed. Later I used the term "Play School" in my university extension of physical education and play in Missouri, especially in the campaign for the organization of playgrounds under the school boards of rural towns with the hope of fusing the functions of the play-center with the school. I left the University of Missouri before any part of the larger idea was realized.

Spontaneously curious about his own activities and those of nature, animals and man, he imitates them all until he masters their emotional and ideational content. He is spontaneously a manipulator of things, a juggler of impressions, and he constructs with things and ideas. He is spontaneously linguistic and "talks" until he can express what he observes, thinks and feels. He is spontaneously social and enters into social relationships and organizations. He is spontaneously suggestible and educable; he is a follower, an imitator, a hero-worshiper, craving leadership and instruction in ways of acting that will satisfy his hungers and give him adjustment.

This spontaneous expression of energy under the stimulus of hungers, controlled by instincts and modified by experience and social tradition and susceptible to leadership, is *play*. Play is not the popular "just play" nor the schoolman's "mere play." It is identical with the child's spontaneous living. Its relation to work will be considered later.

If time permitted, it would be possible to show that play began to evolve with the capacity to use experience and choose ways of acting, i.e., with the beginning of the evolution of intellect. It is just as deep in meaning as either the intellect or the will. Its function is to develop the latent plastic powers of rational man and keep him flexible through adult life. Play is the central element in the scheme of human nature that makes volition possible.

Infancy, biologically speaking, is a period for parental care during which time systems of nervous connections, feelings and ideas are developed together *through play* in order that the nerve paths may be controlled in volitional or rational conduct.* Without play man is inconceivable; play makes volition and rational living possible. There is no meaning to the phrase "mere play," for play is the most important activity in life.

Play is nature's method of education. Why? Because education, in its broadest sense, is identical with the process of living. More specifically, it is learning how to live through experience. But experience comes only as the result of activity, and play is the fundamental form of all developmental activity. It is spontaneous living. Out of the various reactions upon the environment that we call experience comes the development of the instincts and emotions and the experience that makes for knowledge, character and adjustment.

Schools, books, libraries, laboratories and museums are only devices to give opportunities for activity. All these are worthless and the teacher is impotent without the activity of the individual to be educated. And play, as has been said, is the primary form of this activity.

*These theoretical interpretations are drawn from a forthcoming volume on the Nature and Function of Play.

So striking is the child's expression of his energies, so broad his curiosity and so intense his delight in his activities, that the most conspicuous thing about him is his struggle to gain an education. And his struggle is rational. He is as much "interested" in activities that develop his organic, nervous and character powers as he is in getting information, and *vice versa*.

The child wants a real education; and he wants to get it in the only satisfactory way—just as the race got it, through experience. For years educators have been going to the child with their "priceless products of racial experience," and the child has said (by his reactions): "Go to, I don't want your canned goods. I want the fresh, juicy fruit of experience gained through my own activities"—and he gets it, though frequently it is of indifferent quality and often positively bad.

In his play, which is his real life, the child educates himself, even without instruction or aid. The result, however, depends always upon the character of the activities, and this is determined partly by the individual child's temperament, partly by his opportunities and largely by the example and leadership supplied in his environment. Through these forces come development, and character and ideals are formed. It is the duty of education as a social effort to feed the spontaneous life-hungers of the child with the wisdom of the race. Coöperation must be given that the play-life may be broad, rich and wholesome. Hence, individual leadership is essential.

Leadership means study, suggestion, direction. It may mean control in which discipline in work and duty have a place; it never means mere domination. This coöperation and leadership in the child's struggle for activity, experience and self-expression, the play school proposes to give completely.

Relation of Play and Work—Education.

Disagreement concerning these principles may arise through old misinterpretations and confused notions about the relation between play and work. The fact that the child must learn to work cannot be over-emphasized, for he has needs, supplied during the early years by the home, that later he must satisfy through work. Moreover, if he is to become an efficient social being, he must learn to perform duties that frequently are not pleasant and his adjustment will be flexible and complete in proportion as he masters the essential culture of the race. Born into a complex social order that is the product of long ages of social evolution, he must not only learn to work but acquire the capacity to work according to the conditions of modern society.

The ability to satisfy needs, to perform onerous duties and to acquire culture demands the capacity for long-sustained volitional effort under the control of an idea of need or duty. This

is work in its developed form. This capacity to work is not achieved suddenly. It is an acquired trait. The infant has no capacity to work: the capacity is acquired, in the normally developed individual, during the period between birth and maturity.* It appears in late infancy and we exploit it in school by the sixth year. It develops very gradually up to the age of seven, more rapidly from seven to twelve, and increasingly fast during adolescence.

The rise of the capacity for work is associated with and directly dependent upon a correlated and parallel development of (1) the power for volitional action in the plastic nervous system through the developmental stimulus of activity in play; (2) the development of the capacity for volitional attention through the exercise of reflex attention in the instinctively controlled activities of play; (3) the development of the capacity for sustained enthusiastic effort through the exercise of the emotion of expectancy which holds attention in the emotion-suffused activities of play; and, finally, (4) the development of a moral sense of purpose or responsibility or ambition, which comes with a maturing of the social self.

The growth of all these nervous and mental powers that make work possible begins in the simple and instinctive activities of the infant which everyone recognizes as play. The young child can be educated in no other way. But later the development may be continued either through play or work as above defined, and *it is just here that the confusion arises concerning the relationships of play and work in education.* To anticipate my conclusions, play, because of its emotional accompaniment, is a more efficient developer of all the fundamental powers used in work than work itself.

The child's activities develop progressively (1) in the muscular strength used, (2) in the variety, complexity, duration and coördination of movements, (3) in the number of instincts and desires and the form and intensity of their expression, (4) in the breadth of the associative processes used, and (5) in the *span of sustained effort in the accomplishing of a desired end.*

Now, the *activities* exhibiting this progressive development *may frequently be considered either play or work according to the point of view.* From the standpoint of the child, there are only two classes of activity: internally impelled activity, or play, and externally impelled activity, or work. *Any activity from the child's standpoint, no matter what the powers used, the energy*

*The roots of both play and work are present from the beginning. The struggle to satisfy physical needs or escape discomforts expressed by vocal, facial and general bodily movements may be called the roots of work. The struggle to satisfy sense, nervous and mental needs or the spontaneous actions and reactions of adjustment may be called the roots of play. It is in these latter activities primarily that all the higher powers for work and play are developed.

expended, or the duration of the effort, *is play if it is internally impelled and satisfies the developing life-hungers and instincts of the age period.*

From the standpoint of the adult, or objectively considered, the activities of the child that are sustained and have a purpose or future aim are apt to be called work; but, obviously, this is an interpretation of child-life in adult terms. The adult, if he is an efficient social being, must work and he must recreate. No such situation exists normally in child-life. The child gains his economic adjustment through the home. His play is both recreation and work and it is neither recreation or work: it is life. Before maturity his play activities are differentiated into the capacity for work and the need for recreation. The child's play is not recreation as usually understood and we cannot insist on that too strenuously. *Play is the child's chief business in life.* In these internally impelled activities he lives and learns how to live. In them he should gain his primary development and life adjustment.

Play is as broad as the child's developing life. The activities frequently take forms that are not efficient from the adult or educational standpoint; but to identify the child's play with "fooling" or "futility" only, shows a twisted understanding of child nature that is a very subtle survival of medievalism in modern educational thought. This is exhibited in the shrinking from the idea of play as an educational force.

There need be no quibbling about the fact that a high capacity for work can be developed, has been developed generally in the past through work, though the efficiency of the majority of individuals developed by this method alone can be questioned. But the essential point to be recognized is that, all through childhood, *play is superior to work as a developer of the nervous and mental powers used in work because of its emotional content.* Moreover, the degree of development of the power for work depends upon the breadth and richness of the play experience.

Play is more intense, varied and of greater duration because of the sustaining power of enthusiasm which postpones the onset of fatigue and reduces the consciousness of effort which characterizes the volitional attention of work. Therefore, as power is a product of activity, play is a better developer of nervous energy and volitional attention than work. It is essentially the developer of enthusiasm, which is the very essence of play.

Enthusiasm is expectancy: the emotional side of the instinct of attention, long drawn out or combined with the idea of an activity that will satisfy a hunger or developed desire. It is developed like any other capacity—through exercise in activities that feed the nervous and mental hungers and exercise the impulses characteristic of age periods. Enthusiasm is the spirit of healthy childhood. It carries the burden of sustained voli-

tional effort until the capacity for sustained effort is established as a habit.

Play, therefore, is a better developer than work of the whole work mechanism. It develops organic vitality, nervous energy and skill, interests, volitional attention and enthusiasm together, as a unified and efficient working whole. Work is less effective because it disassociates the development of the capacity for enthusiasm from the development of the capacity for volitional effort and attention in realizing aims.

The capacity to work, therefore, as a part of the capacity to live, is best developed in the child's natural life or play. It is developed only in a negative way when the child sits still and does things foreign to its nature in obedience to the commands of adults. Such lack of activity depresses vitality and inhibits the development of the nervous system, volitional enthusiasm, and experience. It is one of the several factors that have caused children to "forget how to play."

The capacity to work from its simplest to its highest form is acquired most efficiently by living out in activity, broadly and intensely, the hungers and instincts characteristic of each age period; living them out in a social environment that supplies not only progressively greater opportunities for activity, experience and self-expression, but progressively greater opportunities for accomplishment under a leader who molds ideals, and under social contacts charged with emulation. *By realizing a progressive series of aims in play, the child learns how to work and to achieve life through work.* This is the law of child progress.

If the capacity to work does not come out of these inspirations to live and work, nothing this side of a new ancestry can give it, and the individual is a subject for an institution for the socially dependent.

The developing work mechanism will be used in fulfilling social duties and obligations, when the social spirit in the child's instinctive loyalty, coöperation, self-subordination and capacity for leadership is converted gradually into a consciousness of social relationships, interdependence and obligations. This can be accomplished through the socializing influence of a progressive social experience under a leader who has in the background of his consciousness a social aim.

Again, the work mechanism will be used in acquiring racial culture and a higher adjustment through the use of books when social experience and leadership bring a consciousness of their worth. This will come early in some, later in others, probably not at all in many, but until books are attached to the central and developing enthusiasms in life, as aids in living, they will not be used extensively by the masses.

Vocational training and guidance are but a phase of this work-play program and not the first or most important one, since

a vocation is but one form of adult adjustment, arising out of the child's progressive adjustment. A vocation is an individual matter realized through living, and in this living the individual should develop an enthusiasm for life and work; should discover, under leadership, his individual capacities and attach the enthusiasm and the capacity to that specialized social thing, an occupation.

Better educational results in general and a broader and higher capacity to work are secured by organizing the child's natural self-sustaining activities than by forcing upon him those foreign to his nature. To lay the foundation during childhood for efficient citizens and workers, the hunger for life, the power for sustained activity, the enthusiasm in doing and ideals in living must evolve together.

This natural method of developing workers will produce, has always produced, citizens to whom work is "play" because it carries the enthusiasm of play.

The difficulty in appreciating the law of learning how to work is the universal, thought-warping tendency of adults to interpret child-life in adult terms. The attitudes towards play and work need to be restated: (a) From an adult standpoint, play is a form of activity set over against the effort required by the driving necessities of adult needs; (b) from the child's standpoint, play is living; work is effort that has no connection with instinctive or emotional tendencies; (c) from an educational standpoint, play is a developer of all the fundamental powers of the plastic growing organism: work is an educational aim that is to be realized through living out interests characteristic of the several stages of child development until the work mechanism is established.

The law, then, of the relations of play and work in education may be stated as follows: Play, as internally impelled activity, is practically the only method of education during infancy; is the most efficient method all through childhood; retains a conspicuous place during youth and even in adult life, as indicated by the modern attitude towards leisure time. Work, as externally impelled activity, has little place in the life of the infant, a subordinate through gradually developing place in the life of the child, but an increasingly important place during youth.

Perfecting Nature through Leadership.

In many fields of human effort, notably in engineering and the production of domestic animals and plant forms, man has progressed by learning nature's laws and coöperating with nature or controlling and perfecting her processes. In education, man has neglected, even fought, nature.

This is shown most conspicuously in the traditional attitude

towards play and the neglect of its physical, intellectual and moral meaning. Considered without traditional bias, education holds no antagonism between play as the living out of hungers and instincts, and work as a developing capacity for efficient living in a highly complex, specialized civilization. Such antagonism is medieval and frequently carries with it a survival of asceticism. The traditional school evolved its organization for the convenience of the teacher in transmitting information to a physically passive child. Play frequently interfered with the teacher's program, hence was interpreted as a product of the imps. Does not this attitude still survive?

Because play has been despised, the programs for moral education are weak and bloodless. Morals and character in child-life come out of living under influences that mold associated ideals and instinctive ways of acting; not out of drill in abstract precepts or in thinking about conduct disassociated from real conduct, however valuable the latter may be when supplementary to the laboratory method, which is directed play. Ethical instruction, to be dynamic, must be built on a broad foundation of instincts trained in play, under a leader who has the ethical aims and who will fix the ethical ideal. This is a practical program for the masses.

In the unnatural conflict between the mental and the physical, this bias in educational thought is even more apparent. The traditional school has dealt with one narrow phase of child nature. It still recognizes organic and nervous education with begrudging stinginess and is attempting to bolster the traditional program with a "school hygiene" that, as a substitute, is utterly futile. This superficial and unscientific attitude is carried over from a phase of philosophical speculation that has no place in education. Physical education is discussed as though it were a subject of study in the curriculum, instead of one attitude in considering the whole educational process, of which it is the basic part. Physical education, as a special field of educational effort, arose because of the twist in educational thought created by the rise of asceticism. It persists because of a survival of asceticism. Because of this bias, the programs for physical education in most schools are pathetically superficial and the children show it. Vigorous, big muscle play is nature's method of physical education and bulks large in the efficient program.

So obsessed is our consciousness with the idea that education is something which comes from books, and so dominant has been the intellectual or cultural idea, that the masses of children are prevented from getting an educational experience. We insist that they shall master the tools of learning before they get any experience and then that they shall take it second-hand. At one extreme there develops a group of individuals having the capacity to acquire large masses of book learning with a small foun-

dation in practical experience; and at the other, a group who may or may not have had real experience, but who have a contempt for books and no realization of their value as essential aids in living or as sources of inspiration for a higher adjustment.

Modern literature on teaching is strewn with the word "motivation." Every effort to find a "motive" for an activity or a subject of study is a search for its basis in a hunger or instinct which underlies the child's spontaneous life. This search represents generally the attitude of the adult, with an adult's interest, trying to find some way of attaching that interest to the child's native tendencies. It illustrates the breadth of the psychic gap between the teacher and the child and the dominance of the attitude of teaching, rather than leading.

Why not shift the problem from the organization of "subjects of study" that are selected products of racial achievement, to the organization of the child's own spontaneous active life; from the attitude of teaching primarily to that of leading (which includes teaching)? Why not abandon our indifference towards the child's play and recognize it as complete living, from his viewpoint, as well as the dominant source of all educational values? Why not put our aims and our specialized adult interests in the background of our consciousness and enter into the child's life from his point of view, meeting his hunger for life and his desire for leadership with the resources of the adult? In this way we can make his activities a source of inspiration to him and perfect their results from an educational standpoint. Does not this attitude complete modern tendencies in educational thought? Will it not make public education efficient for the masses?

In this larger conception of education, leadership is the prime essential. Teaching is but a part of the leadership for which the child's hunger is as conspicuous as his hunger for education. He craves life intensely, but his imagination outruns his skill and judgment. His resources are limited; his attention is fleeting; his enthusiasm breaks down. *He must have leadership if his activities are to be satisfying or educationally efficient.* Though he rebels at domination, he constantly appeals for help in finding something to do and in achieving his desires; and, when leadership is given and accepted, he will submit to endless direction, and, as age advances, to increasingly severe discipline. This is proven daily on the play field and in boys' and girls' clubs.

By entering into the child's life, it is a simple matter to lead him so as to loop the cultural material of the race to his hungers and thus achieve results not possible under the subject-of-study teaching program. That process is inverted. It must be recognized, however, that there are enormous variations in children's capacities for progress in various activities and in their susceptibility to suggestion.

Here appears a danger. A vast difference exists between learning nature's laws in the development of child-life and co-operating with her or perfecting her processes through the child's susceptibility to leadership, and the skillful exploitation of that susceptibility to satisfy the vanity of parents or teachers whose minds are cataleptic under the obsession of some educational fetish. We are in some danger of entering into an age of child prodigies.

Objections are raised that education is inefficient because it is made too easy. Signs of a reaction have appeared. Now, whatever of justice there may be in criticisms of "teaching through play" no justice exists in criticisms of the leadership of play. This leadership has its biological roots in the evolution of the inter-relationships between parent and child, and play is not "easy" in the sense of being devoid of effort or hardship. Both the intensity and the duration of extreme effort in many forms of play activities are so striking that few adult activities can be compared with them.

Play is interesting, but to interpret education as something uninteresting strikes the very nervous system of education with a palsy; and to say that because anything is interesting it is educationally undesirable is surely a survival of ascetism. We have failed in education because we have ignored play and divorced education from life.

The dominance in education of the play motive, or real living in obedience to real present needs during child-life, does not mean that there shall be no discipline. Living is discipline. The child, like his ancestors from the beginning, is driven by hungers and controlled by instincts that are non-specific. His conduct is largely the product of experimental experience, which frequently causes pain as well as pleasure. So was the conduct of his ancestors. As a result of racial experimentation, the child is born into a complex network of ways of acting, both good and bad. Lacking judgment and perspective, he is apt to imitate the bad examples in his social environment as well as the good, thus forming habits, ideals and character that are bad for him and for society. To mold the ideals developing in the child's experience is the function of the parent and society's representative of the parent, the leader or teacher. *Discipline by adults, like leadership, has its roots in the biological relationships of parent and child.*

Practically all the bad habits known to childhood and youth are the product of our neglect of this function of leadership. Vices develop in play. This is the negative argument for putting moral education on a laboratory basis of directed play. The danger here is that, with the prevalent notion about "teaching," the tendency will be to control the experimentations too strictly and to control ideals before there has been experience.

To summarize, it would seem, therefore, that education will be efficient when we bring the resources of adults to aid the child in his struggle for activity, experience and self-expression and when adult leaders meet the child's hunger for guidance with the spirit of a superior playfellow and with the discipline of leadership. This the play school proposes to do.

(TO BE CONTINUED.)

A COURSE OF STUDY IN DANCING FOR HIGH SCHOOL GIRLS.

WORK FOR SECOND TERM.

CARRIE VAN R. ASHCROFT, NEW YORK CITY.

SMALL BEATINGS MOVING FORWARD AND BACKWARD.

Stand with the arms in second position and the right foot in fifth position back. Slide the right foot sideways until it points in second position (1). Draw it to fifth position front and place it flat on floor (2). Repeat with left foot (3-4). Repeat right and left, moving forward for 16 counts or eight beatings (measures 1-8). With the eighth beating the left foot is in fifth position front. Begin at once to move backward. Slide the left foot to second position and draw it to fifth position back. Repeat right and left, moving backward for 16 counts (measures 9-16). Arms in second position through the exercise; drop them sideways on count 16. Point the foot in the open position; place it flat in the closed position. Emphasize the beat each time, as the foot is drawn to the closed position. Use music for battements in the First Term. (Page 224.)

ANALYSIS OF SCHOTTISCHE STEP.

Slide; cut; leap; hop. Stand with the right foot in fifth position back. Slide the right foot sideways (1). Close left foot to right and instantly raise (or cut) the right sideways (2). Leap sideways on to the right foot and bring the left up close in fifth position back (3). Hop on the right foot in place, keeping the left raised backward (4). Repeat to left. The execution must be brisk and snappy.

Glide Schottische.

Stand with the right foot in third position front. Slide the right foot forward (1). Close left foot to third position back and raise the right forward (2). Step forward on right (3). Hop on right and extend left forward into a raised position (4). Repeat left. The execution must be quiet and smooth.

Skater's Schottische.

Similar to glide schottische but raise the free foot backward on count 4. Make the slide large and free and diagonally forward to imitate the movements of skating.

German Schottische.

The above analysis is what is commonly accepted as the schottische step in our New York high schools. It is only the first part of the old German schottische, which was a couple dance in waltz position, as follows,—man's part is described, partner, counterpart.

Part I (measures 1-2). Move sideways in line of direction, thus,—step sideways left (1). Close right foot to fifth position behind (2). Step sideways left again (3). Hop on left foot, raising right backward (4). Repeat moving sideways to rear (5-6-7-8).

Part II (measures 3-4). Step and hop on left foot, raising right backward (1-2). Step and hop on right foot (3-4). With these two steps hops make one complete turn to right, gaining distance in line of direction. Repeat step-hop left and right, making another complete turn to right (5-6-7-8).

STEP-HOP FORWARD.

Stand in couples, with inside hands joined, facing forward. Step forward on right foot (1). Hop on it and raise left leg forward, knee straight (2). Repeat step-hop on left foot (3-4). Repeat right and left alternately, moving around the room. The execution must be very free and light with a joyous expression.



FIG XI. OPEN ARABESQUE POSITION

GLIDE SCHOTTISCHE AND STEP-HOP FORWARD.

Stand in couples, with inside hands joined, facing forward. Begin with outside foot, left for man. Take two glide schottische steps forward (counts 1 to 8 or two measures). Then four step-hops forward, beginning with outside foot, left for man (counts 1 to 8 or two measures). Make the glide schottische very smooth and the step-hop light and brisk. Use as a simple partner dance.

STEP AND TURN.

Stand in first position. Step sideways right, placing all of the weight upon the right foot and pointing toes directly sideways right. At same time raise arms to second position, turning head to look at left arm and bending very slightly to left (1-2). Swing left foot around in front and place it on toes directly in rear of right heel. Arms move swiftly to first position. Rise high on toes turning to right and finish facing front with right foot in fifth position front, flat on floor, weight equal. Arms up to fifth position and open to second just as you finish the turn (3-4). This has been called a "tour de Basque"; a "pas de tour" and a pirouette. It will be referred to in these articles as step and turn or simply the turn. As an exercise, practice it twice to right and twice to left, or once each way.

2d Turn *Step and Turn and Slide-Hop and Turn* M. F. Mac Connell

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SLIDE-HOP AND TURN.

Stand in first position. Slide diagonally forward on the right foot and hop on it; left leg raised backward, knee straight. Arms from first out into the Arabesque position; right raised diagonally forward, just above the shoulder level, palm outward; left arm diagonally down and back to

left (1-2). Step on left foot and cross right foot behind. Arms move to second position and then into a low first position (3-4). Repeat left and right, then step sideways left and turn as explained in the preceding exercise. The step and turn is done to the fourth measure of the music. Repeat slide-hop beginning left foot; do it three times and close with step and turn to right on the eighth measure of music.

BALLONNÉ.

Stand with right foot in fifth position front and arms in third right. Look up at right hand. Raise the right foot sideways in preparation, with foot pointing sideways. Hop on left foot gaining distance sideways right and drop the right foot flat on floor with foot pointing sideways (1). Close left foot to right (2). Repeat three times moving sideways right. Keep arms in third position right and look up at right hand (3-8). Change arms through first position to third left, and repeat four ballonnés to left. The step must be free and large. Cover as much space as the room will permit. As a combination, available for dance construction, practice two ballonnés; step and turn. Use one measure of music for the ballonnés (1-2-3-4) and one measure for step and turn (5-6-7-8).

COMBINATIONS OF STEPS AS SUGGESTIONS FOR A SCHOTTISCHE SERIES.

I.

Two ballonnés; hopping turn.

Four times (eight measures).

Two ballonnés (measure 1).

Move sideways right with two ballonnés; arms in third position right.

Hopping turn (measure 2).

Make a complete turn to right, thus,—slide on right foot, making about a quarter turn; left leg raised backward, knee straight. Then hop three times on the right foot completing the turn. The slide is large, the hops are small and very light. The arms remain in third position.

Repeat (measures 3-8).

Repeat ballonnés to left and turn to left. Repeat all to right and left. If preferred as a finish, step and turn to left instead of the last hopping turn or step sideways left and courtesy.

II.

Slide forward and three hops. Repeat.

Bourrée changée and hop. Repeat.

Twice (eight measures).

Slide and three hops (measure 1).

Slide diagonally forward on the right foot, and three hops in place on the right foot; left leg raised backward. Arms in third position right.

Repeat left (measure 2).

Arms move down sideways into first position, and up to third left, as you slide.

Bourrée changé and hop (measures 3-4).

Cross right foot behind (1); step side left (2); cross right foot in front (3); hop on the right foot and raise the left sideways (4). Arms move down sideways; to first and open to second position on count 4. Repeat the *bourrée changé* and hop; begin by crossing the left foot behind and move sideways left. Circle arms from second to first and open again to second position with this *bourrée* to right side. Repeat all (measures 5-8).

III.

Two Cuts

Leap and cross behind.

Leap and swing front.

Four times (eight measures).

Two cuts (measure 1).

Stand with the right foot pointing forward. Arms in second position. Raise the right foot forward in preparation. Replace it in third position front, and cut the left foot backward (1). Hop on the right foot, keeping the left foot raised backward (2). Place the left foot and cut the right forward (3). Hop on the left foot, keeping the right raised forward (4). With count 1, bring arms down to first position, looking at the hands. The body is facing sideways left. Hold arms in first position for counts 1 and 2. Open arms to second position again as you raise right foot forward on counts 3 and 4.

Leap sideways and cross behind ($\frac{1}{2}$ a measure).

A short leap sideways right (1). Cross left foot behind with another short leap (2). These are not the regular dancing leaps, but are like quick steps, high on the ball of the foot. Arms in third position right. Look up at right hand.

Leap sideways and swing front ($\frac{1}{2}$ a measure).

Leap sideways right again (3). Hop on right foot and swing left across front (4). Open arms to second position on count 4.

Repeat (measures 3-4).

The left foot is raised, in preparation. As you place it in the fifth position front for count 1, turn the body so you are facing sideways right. Arms in first position, etc. Move sideways left with the second part of the exercise, the leap, cross behind; leap and swing across front.

ARM MOVEMENTS (*port des bras*).

These exercises are exactly like those described in the first term (page 228), except the turn of the body with the movement. In exercises I and III you face front right corner and during the exercise turn to face left corner. Keep the feet still, turning the body only. Use music for *port des bras* in first term (page 229).

I.

Right foot in third position front. Turn the body about one quarter turn around to the left. Arms in first position; move them to second position, turning the body to the right as you face right side of room. The eye follows the right hand. Face front and lower the arms.

II.

* From first position to third left, with the body facing directly front; look at the left hand. Carry the left arm to second position, following it with the eye. Turn the head to face front and lower the arms sideways.

III.

From first to fifth position, with body turned to the left, raise the arms from first to fifth position, looking up into the hands. Turn the body to the right as the arms move into second position. Let the eye follow the right hand. Face front and lower the arms sideways.

IV.

From first position to fourth left, with the body facing directly to the front. Look at the left hand as you lower arms into second position. Then face front and lower arms sideways.

Arm Movements in Arabesque.

Stand with right foot in fifth position front and arms in a low first position. Raise arms forward up to first position opposite chest (1). Open arms into left Arabesque position, that is left is stretched diagonally forward up until the hand is opposite the face, palm turned outward, right arm down and back, with hand just below waist, palm down. As you open the arms point right foot in second position and make a quarter turn left on left foot, facing left (2). Hold the position facing left and lower left arm to shoulder level (3). Carry arms into the low first position and place right foot in fifth position front. Look down at the hands, making a very slight turn to right, that is, body faces front right corner of room (4).

Repeat the exercise three times, placing right foot in fifth position back the last time. Repeat the whole exercise to right side raising the right arm, facing to right and pointing left foot sideways.

As a progression do the exercise in two counts—on count 1 open into the Arabesque position and point the foot. On count 2, lower the arms and replace the foot.

As a further progression do the exercise right and left alternately, drawing the foot to fifth position back each time and in this way gain distance backward.

A CLASSICAL DANCE, SOLO TYPE.

The Shepherdess.

I.

Two schottische steps forward.

Step-hop turn.

Twice (eight measures).

Schottische steps (measures 1-2).

Stand with right foot in third position front; right hand on hip; left arm raised high over head. Slide right foot forward (1). Close left to right and cut right forward (2). Step forward on right foot (3). Hop on right and raise left foot forward (4) and as you hop change arms to left hand on hip and right arm raised. Repeat schottische step forward left but do not change arms on count 4.

Step-hop turn (measures 3-4).

The right foot is raised forward and right arm is raised. Make a complete turn in place to right, thus,—step and hop on right foot with left raised forward, making a quarter turn to right (1-2). Repeat step-hop left making another quarter turn to right. Repeat step-hop right and left to complete the turn, facing front with 7-8.

With count 5 begin to change arms; right moves down to hip, as left moves up to fifth position. Make the change slowly so you finish with count 8.

Repeat all (measures 5-8).

Begin right foot and repeat the two schottische steps forward and the step-hop turn.



FIG. XII. STARTING POSITION
Step I



FIG. XIII
Step II, Counts 1-2

II.

Slide-hop forward; step-hop backward.

Bourrée changé and hop.

Four times (eight measures).

Slide-hop; step-hop (measure 1).

Slide diagonally forward and hop on right foot (1-2) raising arms from first to fifth position. Step diagonally backward on left foot, raising right forward and opening arms to second position (3-4).

Bourrée changé (measure 2).

Cross right foot behind (1). Step side left (2). Cross right foot front (3). Hop on right and extend left sideways (4). Arms circle from second position, downward; into first and open again in second.

Repeat all (measures 3-4).

Slide-hop forward on left; step back and hop on right. *Bourrée* changé across to right side. Repeat all of step II right and left (measures 5-8).



FIG. XIV.
Step II. Counts 3-4



FIG. XV.
Step II. Count 8

III.

- (A) Four schottische steps backward.
(B) Point-throw twice, Bourrée changé.
Repeat B.

Four schottische steps (measures 1-4).

Left arm raised high over head, right hand on hip. Face rear right corner of room and do one schottische step in that direction. With the hop on count 4, make a half turn left so you face rear left corner and change arms. Do one schottische step left, moving toward rear left corner. Repeat right and left. Each time you turn toward front of room on count 4 and change arms.

Point-throw and Bourrée (measures 5-8).

Left arm high over head, right hand on hip. Hop on left foot and at same time point right foot in fifth position front (1). Hop again on left and throw the right foot diagonally forward (2). Repeat point-throw (3-4). One bourrée moving sideways left, thus,—cross right behind (1). Step side left (2). Cross right front (3). Hop on right and extend left sideways (4). During the bourrée the arms circle from second to first and open again in second just as you hop on 4. Beginning left foot, repeat point-throw twice. Move across to right side with the bourrée.

IV.

Slide-hop three times.
Step and turn.
Twice (eight measures).

Slide-hop (measures 1-3).

Slide diagonally forward and hop on right foot, left leg raised backward. Arms first to the Arabesque position (1-2). Step back on left foot and cross right behind (3-4). Repeat to left. Move arms to first position just as you begin the slide, then open into the Arabesque position on left side, just as you hop. Repeat to right.

Step and turn (measure 4).

Step sideways left, arms in second position. Swing right foot around in front and turn in place high on toes. Arms to first, up to fifth and open to second just as you finish.

Repeat all (measures 5-8).

Begin to left and repeat all of Step IV. Slide-hop three times; step sideways right and turn.

A COUPLE DANCE

BY

R. C. GRANT.

Schottische Two-Step.

Couples stand in waltz position. Man's part is described, partner, counterpart.

Part I.

Step sideways left (1). Point right foot in fifth position back and bend both knees (2). Repeat step-bend sideways right (3-4). Four slides sideways left moving around the room in line of direction (5-6-7-8). Finish with the weight on left foot and right foot pointing, that is, the feet are in open position. With this last slide, just as you place the weight on left foot, make about a quarter turn to right so you are free to lead your partner turning to right with the next step.

Part II

Three two-steps, turning to right and moving in line of direction (1-6). On count 7 step sideways left, and close right to left on count 8. You are now ready to repeat the dance. Repeat from beginning as often as desired.

FOLK DANCES.

1. Highland Schottische.
2. "The Butterfly."
3. "Ruffy Tufty."

Nos. 2 and 3 are described in *The Country Dance Book*, Part I and Part II, by Cecil Sharp, published by Novello.

MUSIC FOR SECOND TERM.

1. "In the Shadows." Hermon Finch. Published by Hawkes and Son, London.
2. "Cupid's Garden." M. C. Eugene. Published by T. B. Harms, N. Y.
3. Humoreske. Dvorák. Published by Ditson, N. Y.
4. "Golden Trumpets." Rollinson. Published by Ditson, N. Y.
5. "Shepherds All and Maidens Fair." Nevin. Published by G. Schirmer, N. Y.

Use No. 5 for The Shepherdess. Use first and second melodies only.

**EXAMINATION OF THE SWIMMING POOL AT THE
NEW GYMNASIUM OF THE RENSSELAER
POLYTECHNIC INSTITUTE,
TROY, N. Y.***

SCOTT W. MACKEY.

II.

The second part of the investigation was next taken up.

The use of calcium hypochlorite for sterilization needs no defense. A very recently published article on the swimming pool, however, cites numerous authorities for its use, and a few extracts from that article are here given.

"Thresh carried out several experiments using both copper sulphate and calcium hypochlorite. He came to this conclusion: Copper, however, appears to have a selective action on bacteria; it may destroy all typhoid bacilli in a water yet not affect the bacteria of the coli group. Calcium hypochlorite, on the other hand, destroys both with equal ease. "To my great surprise I then discovered that exceedingly minute quantities of this chemical sufficed for sterilization—in most cases one part of chlorine and hypochlorite to one million of water were sufficient, and that the action took place in a very few minutes. By the addition of a little sodium bisulphide the remaining chlorine can be removed and the palatability of the water for drinking remains unimpaired."

Additional evidence is added by Turneaure and Russell, who state: "By virtue of the active chlorine which it (calcium hypochlorite) contains, it will destroy all bacteria in a few minutes, even in extremely dilute solutions. The excess of the chlorinated lime may be readily neutralized by the addition of sodium sulphite or calcium bisulphite. Water so treated is perfectly harmless, and does not have its taste or appearance impaired; in fact, remains unchanged except for a slight increase in hardness."

"Mason gives an instance of its value in the purification of the water plant of the Jersey Water Works."

"Walker, Harnaut, Courmont and Lacomme, Traube and Basenge all recommend the use of calcium hyperchlorite for drinking waters after prolonged observations and experimentation."

Before attempting to treat the pool, laboratory experiments were made to get an idea of the proper dose. In doing this, litre samples of water from the swimming pool were treated with hypochlorite in such amounts as to give 0.33, 0.50 and 1.0 parts

*Graduation Thesis, 1913—Rensselaer Polytechnic Institute. Printed by permission.

per million of available chlorine. The samples were allowed to stand one hour and sowings were then made into jelly and lactose bouillon. After this the samples were tested with potassium iodide and starch in the presence of acetic acid, to detect any trace of free chlorine remaining. The results of these experiments showed that a dose of 0.33 parts per million of available chlorine was sufficient to insure an almost sterile water, and leave no free chlorine. The dose of 0.5 parts per million produced an absolutely sterile water and left no free chlorine. The dose of 1.0 part per million produced a sterile water but left a slight excess of chlorine. In view of these results the dose was fixed at 0.33 parts per million of available chlorine.

To apply this dose the following method was developed: A solution of sodium thiosulphate ($\text{Na}_2\text{S}_2\text{O}_3$) was made up, of normality approximately 0.1. This solution was then carefully standardized against a standard solution of potassium dichromate ($\text{K}_2\text{Cr}_2\text{O}_7$) and its normality factor obtained.

The solution of bleach was then made up by adding the commercial hypochlorite to water in the ratio of a pound of bleach to seven or eight litres of water. When this solution had become homogeneous, five c.c. samples were removed and titrated against the thiosulphate of known strength. In this manner the number of grams of available chlorine per litre were calculated.

To facilitate the calculations a curve was computed and plotted showing:

Volume of thiosulphate = f (Grams of Cl_2 /litre bleach).

The calculations follow:

If we titrate 5.0 c.c. of bleach solution against thiosulphate of normality 0.09556

(c.c. bleach sol.) (Norm. bleach) = (c.c. thio.) (Norm. thio.)

$$5.00 \times X = (\text{c.c. thio.}) \times 0.09556$$

$$X = \frac{(\text{c.c. thio.}) 0.09556}{5.00}$$

But $\text{H}_2\text{O} + \text{Cl}_2 = 2 \text{HCl} + \text{O}$

Therefore: $2 \text{Cl} \rightleftharpoons \text{O} \rightleftharpoons 2 \text{H}$

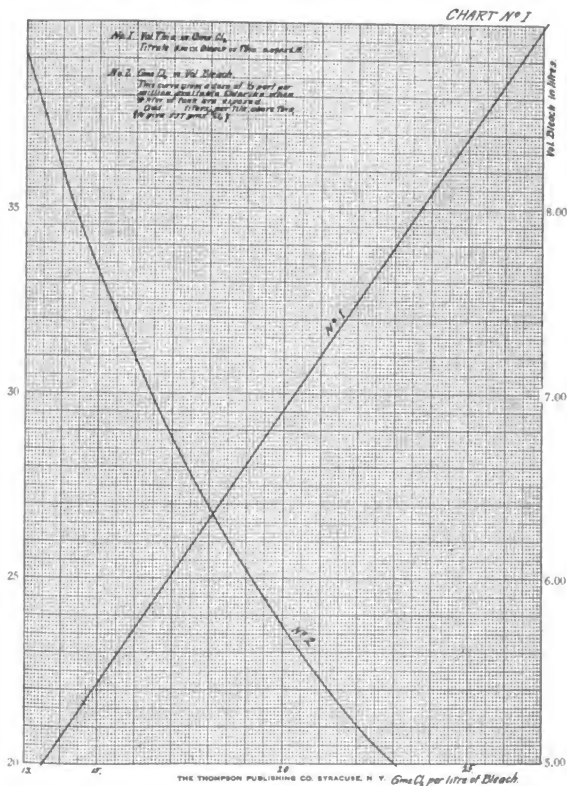
Therefore: A normal solution of Cl_2 contains 35.46 gms. Cl_2 /litre.

Therefore: Gms. Cl_2 /litre bleach = $X \times 35.46$

$$= \frac{(\text{c.c. thio.}) 0.09556}{5.00} \times 35.46$$

Therefore: Gms. Cl_2 /litre bleach = (c.c. thio.) $\times 0.67772$.

From this equation Curve 1 on the following chart was plotted.



Volume of the Tank and Weight of Chlorine.

The next step was to obtain the volume of the tank and from it, the weight of the water to be treated. This quantity varies from day to day, depending upon the amount of splash since the previous filling. Accordingly, a zero was assumed, when four of the small tiles lining the side were exposed and the

weight of water was calculated. From this weight we found the weight of chlorine necessary for the predetermined dose.

From center to center of the small side tiles was found to be one inch. Therefore, the amount of water per inch rise was calculated and the corresponding dose determined. After this Curve 2 was plotted. This curve shows the litres of bleach needed = f (Gms. Cl_2 per litre bleach).

The equation, $\frac{\text{Gms. Cl needed}}{\text{Gms. Cl/litre}} = \text{litres needed, was used.}$

The calculations follow:

$$\frac{75 \times 30 \times 85 - 45}{2 \times 12} = \frac{75 \times 30 \times 65}{12} = 12188 \text{ cu. ft.}$$

$$1 \text{ cu. ft.} = 7.481 \text{ U. S. gallons.}$$

$$12188 \times 7.481 = 91174 \text{ gallons.}$$

$$1.0 \text{ gallon} = 8.332 \text{ lbs. avoird.}$$

$$91174 \times 8.332 = 759,670 \text{ lbs.}$$

If the water in the tank, therefore, weighs 759,670 lbs. we need to give 0.33 p.p.m. $\frac{759.670}{3 \times 10} = 0.25322 \text{ lbs. Cl}_2$

But one pound = 453.6 gms.

Therefore, we need $453.6 \div 0.25322 = 114.86 \text{ gms. chlorine.}$

Dose per inch of water near normal surface:

$$75 \times 30 \times \frac{1}{12} = 187.5 \text{ cu. ft.}$$

$$187.5 \times 7.481 = 1402.7 \text{ gal.}$$

$$1402.7 \times 8.332 = 11687 \text{ lbs.}$$

Therefore, we need 1.767 gms. Cl_2 to treat this weight of water.

Data for Curve 2:

Gms. per litre	Litres needed
13	8.84
14	8.20
15	7.66
16	7.18
17	6.76
18	6.38
19	6.05
20	5.74
21	5.47
22	5.22
23	4.99
24	4.79
25	4.59

$$\frac{\text{Gms. Cl needed}}{\text{Gms. Cl/litre}} = \text{litres needed.}$$

The method of using the chart is as follows:

After titrating 5.00 c.c. of the bleach solution and noting the number of c.c. of thiosulphate used, we find the corresponding "Gms. of Cl./litre bleach sol." from Curve 1. Following this ordinate to Curve 2, the corresponding abscissa gives directly the number of litres of the solution we should use. For every inch rise of the water above the zero adopted above, add to this value enough litres to give 1.77 gms. Cl. This rise is easily found by noting the number of tiles exposed.

The method here outlined has proved simple and satisfactory to work with. It insures the addition of the proper dose, regardless of the composition of the commercial hypochlorite used, and render the analysis and subsequent calculations very easy and rapid.

The experiments* extended over a period of two weeks. The results are presented in detail in the following table:

TABLE No. 5.

Date 1913	Dose of Cl. in p.p.m.	Total Count on Jelly per c.c.	% Removal
May 19.	—	4976	—
May 20.	0.33	14	99.7
May 21	—	120	—
May 22.	—	1350	—
May 23	—	5640	—
May 24.	0.33	10	99.8
May 25. Sunday.	—	85	—
May 26.	—	4670	—
May 27.	—	18	99.8
May 28.	0.33	52	—
May 29.	—	8	100.0
May 30.	0.33	67	—
May 31.	—		

It will be noted that on May 19, before the addition of the first dose of bleach, the total count of bacterial per c.c. was 4960.

On May 20, the first dose of 0.33 p.m. was added. The count dropped within the hour to only fourteen bacteria. The figures for the next three days showed a steady increase. Note that this is slow during the first twenty-four hours after the addition of the bleach, and then the rate of increase becomes greater.

It was not unusual for the total count to reach a greater figure after the effects of the dose had worn off, than before the addition of the bleach. This may be due to the bleach having removed some of the agents hostile to bacterial life in the water.

On May 24, another dose was added. The increase during the next twenty-four hours (Sunday) was only eighty-five, but the

* Covering this part of the investigation.

increase within the following day was much greater, 4670, due to the resumption of bathing.

The succeeding four days showed the water as it should be maintained, that is, in a practically sterile condition.

As a result of the above tests the following conclusions were drawn:

To insure proper sterilization of the water, without leaving any traces which may be detected by taste or smell, a dose of hypochlorite which will furnish 0.33 p.p.m. of available chlorine is sufficient. This dose should be added twice a week at least; but it would be preferable to add it every other day.

Lastly, a few words in regard to the manner of adding the hypochlorite. At first the solution was sprinkled from an open vessel upon the surface of the water. This method insures a thorough distribution, but is open to a serious objection. The distinct odor of chlorine which remained in the room was quickly detected by the bathers and at once eyes began to smart, and a general feeling of being bleached was experienced.

Subsequent additions were therefore made by adding the solution under water, submerging the bottle before uncorking it. Additions made in this way were never detected and not the slightest discomfort was experienced by the bathers. This result was of course to be expected, since the minute quantities of reagent added were at once used up in performing their work. This same "phenomenon" was experienced during tests on the Carnegie swimming pool at Yale University. There the hypochlorite was added as a solid, and to avoid any odor it was put into cloth bags and dragged under the surface.

In connection with the use of calcium hypochlorite as a sterilizer, it might be of passing interest to mention briefly some of the other methods which have been proposed.

Among these, the use of ozone makes, perhaps, the greatest appeal to the popular mind. Fresh air and electricity are always highly thought of. Consequently what could be finer than to purify the water by the use of these two popular agents? As a matter of fact, ozone is entirely adequate for the purpose. Some small plants are now in use for the sterilization of drinking water. The chief hindrance to its being more widely adopted, seems to be a doubt as to the cost of the operation. With the settlement of this question, the process will undoubtedly come into wide use.

Disinfection with ultra-violet rays stands in much the same position, at the present time. Aside from the question of cost, the main difficulty lies in presenting the water to the action of the light in layers of sufficient thinness. Additional trouble is encountered if the water be turbid or somewhat highly colored.

Still another method, namely sterilization by heat, has much

to recommend it for use in such places as swimming pools. By the use of sterilizers of the regenerative type, the water leaves the apparatus only some five or ten degrees hotter than it enters. As most raw water must be heated before use in a pool, this would be an added economy. This method is recommended by Mr. N. Roberts, of the Hygienic Laboratory, Washington, D. C., as being effective against tubercle bacilli. It is worth noting that chlorine in the usual dilutions does not kill these germs.

The Question of Dissolved Oxygen.

Some objection has been raised to the system of refiltration as practiced here, on the ground that to use the same water over and over again was to deprive it of its "life." It has been claimed that the water would lose its sparkle and become dead, the more so as it is shut off from the sunlight and outside air to a great extent. This is right in accord with the widely believed, but entirely mistaken, idea that water in a running stream is always purer than that in a standing body, merely from the effects of aeration.

To meet these objections, a rather complete investigation was carried out to determine the dissolved oxygen contained in the water of the pool at various periods.

For sampling, a calibrated pipette of about 200 c.c. capacity having two stopcocks, was used. The lower end of this was provided with a short piece of rubber tubing which could be bent upon itself by pulling an attached string. By lowering the pipette to any desired depth with both stopcocks closed, and then slackening the string attached to the rubber tube, a representative sample at that point was secured.

The samples so obtained were analyzed by the usual methods for this determination, that is, by allowing the oxygen dissolved in the water to act in alkaline solution on a solution of ammonium ferrous sulphate. The precipitated hydroxides are then dissolved in sulphuric acid and titrated against a standard solution of potassium permanganate.

From the data thus secured, the volume of the dissolved oxygen in cubic centimeters was calculated and then this value was expressed as a percentage of the amount necessary to completely saturate the water at the temperature of sampling.

A typical calculation is here shown:

Sample taken May 29, 1913, 9.45 a.m., under springboard (west end of pool) at mid depth. There had been no swimming since previous evening.

Temperature of the water, 24.7° C.

Capacity of pipette, 215.4 c.c.

$215.4 - 6 = 209.4$ c.c. water used.

K Mn O₄Blank 17.25 c.c. 1.0 c.c. K Mn O₄ sol. = 0.1 m. g. O₂Sample 7.85 c.c. K Mn O₄ used = 0.940 m.g. O₂ (furnished
9.40 c.c. by water).

$$\frac{0.940}{209.4} \times 1000. = 4.49 \text{ m.g. O}_2 \text{ per litre.}$$

$$1.0 \text{ litre O}_2 \text{ weighs } 0.09 \times \frac{32}{2} = 1.44 \text{ gms.}$$

or 1.0 c.c. O₂ weighs 0.00144 gms.

Knowing the temperature at which the sample was taken, we go to the table on page 109 of Mason's "Examination of Water," and find the number of c.c. of O₂ needed to saturate a litre of the water.

$$\text{c.c. of O}_2 = 5.81$$

$$\frac{0.00449}{0.00144} \times \frac{1}{5.81} = 0.536 = 53.6\% \text{ saturated.}$$

These analyses were continued over a period of a week, and were timed so as to include samples taken under widely varying conditions. Those taken early in the morning showed the condition of the water after standing all night, while others were taken during the day, to show the effect of much bathing.

The results of the test were quite striking. In no case did the dissolved oxygen fall below 50 per cent of the amount required for saturation, while in the great majority of cases the water proved to be more nearly saturated. In many cases where the samples were taken during periods when a large number of bathers were in the pool the values ran close to saturation.

This effectually answers the objections which have been raised, and is, on the whole, rather reassuring. For although aeration undoubtedly holds too high a place in the popular mind, yet it is certainly of some value in maintaining the water in a sanitary and, moreover, inviting condition.

The results of these tests are given in the following table.

TABLE No. 6.

Date 1913	Time	Condition	Place	Temp.	Dissolved O in % Sat.
May 26.	9.00.	No bathing since previous p.m.	Deep End.	23.5	52.3
			N. Side, 7'	23.5	55.6
			N. Side, 5'	23.4	54.4
			Low End.	23.5	54.7
May 27.	9.30	As above. Water stirred before sampling.	Deep End.	23.3	55.5
			Low End.	23.4	56.2
May 28.	9.00.	No bathing since previous p.m.	Deep End.	24.0	55.3
			S. Side, 7'	23.8	55.0
			S. Side, 5'	23.9	55.5
			Low End.	23.8	54.8

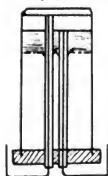
Date 1913	Time	(TABLE No. 6. Continued) Condition	Place	Temp.	Dissolved O in % Sat.
			N. Side, 5'	23.8	Sample lost.
			N. Side, 7'	23.8	57.0
May 29.	10.00.	No bathing since previous p.m.	Deep End.	24.7	53.6
		Filters shut off since 10.00 a.m.	S. Side, 7'	24.7	53.3
		yesterday.	S. Side, 5'	24.5	54.0
			Low End.	24.5	53.2
			N. Side, 5'	24.7	53.8
			N. Side, 7'	24.5	54.4
May 30	2.00	Bathing since 10.00 a.m.	Deep End.	23.6	60.1
			Low End.	23.5	60.2
			S. Side, 5'	23.6	60.7
			N. Side, 7'	23.6	60.5
May 31.	2.00	Extra bathing to-day. B. B.	Deep End.	23.5	74.6
		game Saturday.	Low End.	23.3	75.4
June 2.	5.45	Gym class in while sampling.	Deep End.	23.5	85.8
			S. Side, 7'	23.5	85.6
			S. Side, 5'	23.7	83.0
			N. Side, 5'	23.4	84.4
			N. Side, 7'	23.6	85.0
			Low End.	23.5	83.2

Conductivity and Total Solids.

During the last year or so, considerable attention has been attracted towards the electrical conductivity of waters under examination. In France it is rapidly becoming the custom to report this as a regular part of a water analysis and some recent German publications show the remarkable sensitiveness of this method of detecting the inflow of foreign waters into the water being watched. A point in favor of this method is the ease and rapidity with which this determination can be carried out in the laboratory.

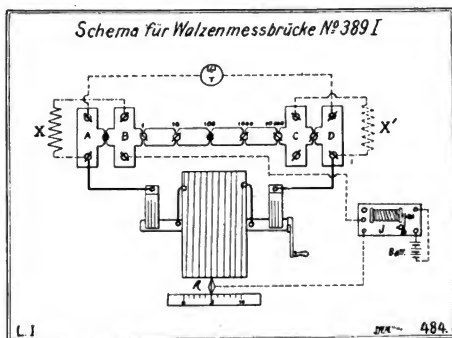
A portable form of this apparatus has also been brought out, which promises to further simplify determinations of this sort. This apparatus, the "Digby-Biggs Conductivity Tube," is pictured and described in the "Transactions of the Faraday Society," Vol. 6, parts 2 and 3, February, 1911.

For these reasons a series of conductivity measurements were carried out on the water of the swimming pool, early in January, 1913, as a check on excess alum in the water.



In making these measurements the method of Kohlrausch was used, and a temperature of 25.0° C. maintained throughout. A vessel of the type sketched here was used; the area of the electrodes and the distance between them was fixed. In use it was found best to platinize these electrodes, and for this purpose a solution containing about 3 per cent commercial platonic chloride and about one quarter of one per cent of lead acetate was prepared.

The Wheatstone bridge was a German instrument of great sensitiveness which gave complete satisfaction and which proved very convenient for work of this character. A diagram of the bridge and conductivity cell with the auxiliary apparatus is given below.



In determining the cell constant, a 0.02 normal solution of potassium chloride was prepared and taken as the solution of known conductivity. The value of $K = 2.768 \times 10^{-3}$ mhos was obtained from Findlay's Practical Physical Chemistry and accepted as correct.

The calculations of the cell constant are given below, and also the derivation of the formula:

$$K = 342.8 \times 10^{-4} \times \frac{X}{1000 - X}$$

Solution, 0.02 normal K Cl at 25.0° C. ($K = 2.768 \times 10^{-3}$ mhos.)

Length of bridge wire—1000.

Known resistance—100.—ohms.

Bridge reading—446.7.

R—resistance between electrodes.

K—specific conductance.

C—cell constant, l/s.

l—distance between electrodes.

s— area of electrodes.

P—specific resistance.

K—conductance of solution between electrodes.

R'—resistance in the bridge.

X—bridge reading.

$$446.7 : (1000. - 446.7) = 100. : R$$

$$R = \frac{553.3 \times 100.}{446.7} = 123.86 \text{ ohms.}$$

$$(1) R = P \times 1/s.$$

$$(2) R = \frac{1}{K} \times C$$

$$(3) C = R \times \underline{K}$$

$$= 123.86 \times 2.768 \times 10^{-3}$$

$$= 342.8 \times 10^{-3} \text{ Cell constant.}$$

From Eq. (2) above:

$$(4) \underline{K} = C \times \frac{1}{R}$$

$$(5) \underline{K} = C \times K$$

$$(6) = C \times \frac{1}{R'} \times \frac{X}{1000. - X}$$

Substituting values from above:

$$(7) K = 342.8 \times 10^{-3} \times \frac{1}{1000} \times \frac{X}{1000. - X}$$

$$(8) K = 342.8 \times 10^{-3} \times \frac{X}{1000. - X}$$

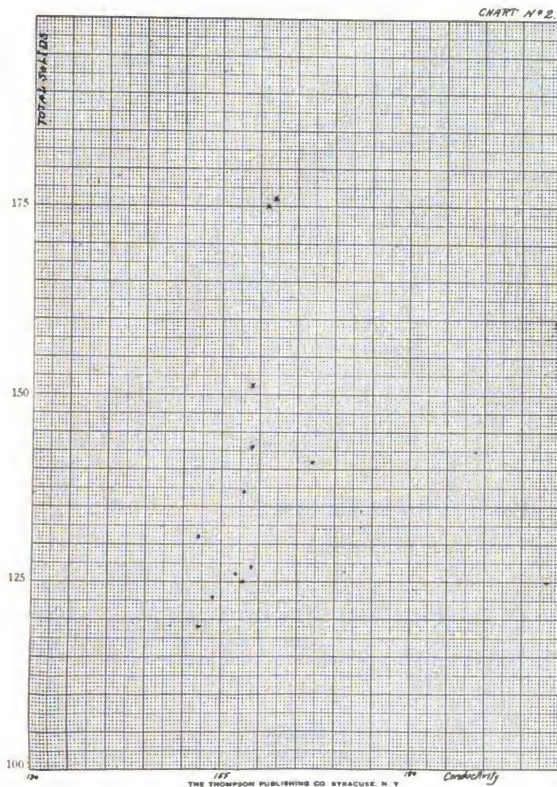
N. B. The value of $\frac{X}{1000. - X}$ in the above formula may be found for any value of X from the table on page 164 of Findlay's Practical Physical Chemistry. This renders the calculations extremely simple and rapid.

Simultaneously with the conductivity measurements, daily determinations of the total solids in the water were carried out. The results of this series are shown in the table below.

TOTAL SOLIDS AND CONDUCTIVITY.

Date, 1913	Conductivity in mhos	Total Solids in p.p.m.
January 7.	157.1 x 10 ⁻⁶	126
January 8.	154.0 x 10 ⁻⁶	123
January 9.	152.0 x 10 ⁻⁶	131
January 10, a.m.	157.7 x 10 ⁻⁶	137
January 10, p.m.	161.1 x 10 ⁻⁶	175
January 11.	159.0 x 10 ⁻⁶	143
January 13.	152.0 x 10 ⁻⁶	119
January 14.	158.0 x 10 ⁻⁶	125
January 15.	167.0 x 10 ⁻⁶	141
January 16.	162.0 x 10 ⁻⁶	176
January 18.	159.0 x 10 ⁻⁶	127
January 20.	159.0 x 10 ⁻⁶	151

From the above table the values of the total solids were plotted as a function of the specific conductivity. This relation is shown on Chart 2.



This chart bears out our expectations in the matter, and indicates rather clearly that there is no direct relation between the two quantities involved. It suggests that the conductivity of a water is a function of the water itself, and tends to retain its identity until the water actually becomes polluted.

To gain further light on this question, the following set of determinations was made:

A series of waters of known turbidities was first prepared. To do this the city tap water was taken as a standard and its conductivity determined. Litre samples whose turbidities ranged from two to thirty were prepared, by using the requisite number of cubic centimeters of standard turbidity solution. This solution was the usual silica standard, used in the water laboratory, and described in Mason's "Examination of Water."

The turbidities and the corresponding conductivities are listed in the following table:

EFFECT OF TURBIDITY ON TOTAL SOLIDS.

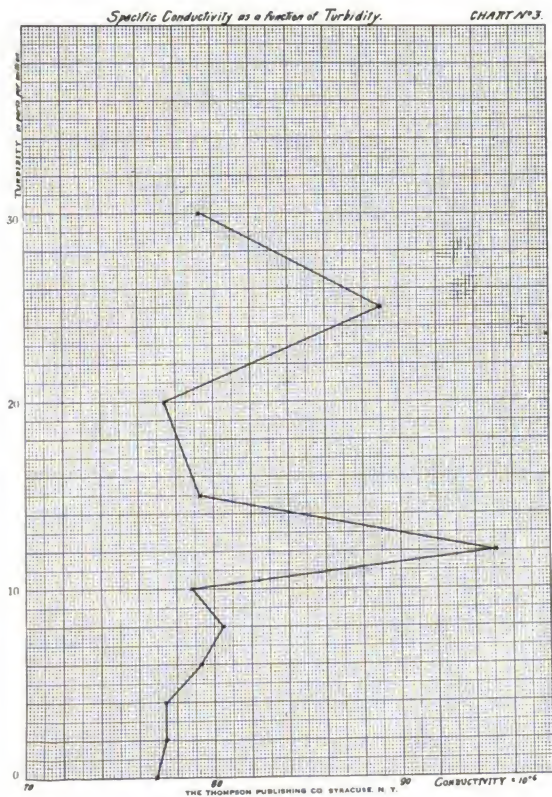
Turbidity	Bridge Reading	R ¹	K
0	183	1000	76.9
2	184	1000	77.4
4	184	1000	77.4
6	188	1000	79.3
8	190	1000	80.5
10	187	1000	78.8
12	217	1000	95.1
15	188	1000	79.3
20	184	1000	77.4
25	206	1000	89.0
30	188	1000	79.3

From this table the turbidities were plotted as a function of the specific conductivities.

This relation is shown on Chart 3.

This chart confirms the results indicated by the first series above. With the exception of the two values for conductivity corresponding to turbidities twelve and twenty-five the results are in remarkable accord.

As a result of the foregoing determinations we may conclude that conductivity measurement furnishes an accurate, sensitive and rapid means of *watching* a water. Its limitations, however, must not be overlooked. By itself, a single determination of conductivity stands very much in the position of the "Total Count" in a water analysis. Its value is chiefly a relative one and its duty is to show up promptly and unmistakably any variation from the normal. The break in the intake of one of our lake cities, which allowed sewage polluted water near the shore to mingle with the purer water drawn from beyond, was found by means of bacteriological tests. Conductivity measurements in this case would have given just as clear a warning of the danger, with a promptness not to be compared with the



more cumbersome method employed. But to determine whether this departure from the normal be significant or not, we must look further into the analysis.

(TO BE CONTINUED.)

EDITORIAL.

PLAY ACTIVITY ESSENTIALS.

1. *Instructors.* The instructors, both men and women, should know how to promote volunteer activity and to select boys and girls with native leadership. The position is clearly not one of a policeman, to prevent activity and the breaking of the apparatus, but to promote the right kinds of activities. Ability to see and use available space is an essential talent on the part of an instructor.

2. *Location.* The play space should be related preferably to the school building. This arrangement allows for the use of the playground during school hours and also after school hours. The school building is ordinarily located in the center of population.

3. *Grounds.* The grounds should be adequate in size, at least 150 square feet per child. The surface of material which dries easily following rain. The surface should not get lumpy, but should be of material which can be kept smooth and level.

4. *Equipment.* Equipment should be furnished for the small children with swings, see-saws, slides and sand bins. For the larger children, equipment should be furnished for mass games, team games and athletic sports. The grounds should be lighted so that they may be used during the evening as well as the afternoon.

5. *Care of grounds and equipment.* The grounds surface should be kept level and free from dust. The equipment of balls, bats, nets, swings and slides should be kept in thorough repair.

6. *Children.* A careful study by the instructor should be made of the inherent interests of the various groups. The playground properly conducted should furnish an opportunity for initiative on the part of its users, without abuse by the few. Organizations should be formed which will call out the initiative and leadership of the various groups.

NEWS NOTES.**PRELIMINARY PROGRAM AMERICAN PHYSICAL EDUCATION ASSOCIATION CONVENTION, BERKELEY, CAL., JULY 21-24.**

Wednesday, July 21, 9.00 a.m. to 5.00 p.m., Convention of the Pacific Coast Physical Education Association.

Wednesday, July 21, 5.00 to 6.00 p.m., Reception for Delegates to the National Convention.

Wednesday night, July 21, 8.00 o'clock, Dramatic Performance in the Greek Theater.

Thursday and Friday mornings, afternoons and evenings, and Saturday morning and afternoon will be held for assignment of the National Program Committee. The local Committee, however, will cooperate with the National Program Committee in arranging "breathing spells," excursions and interesting events throughout those days.

We plan to close the Convention on Saturday night, July 24, with a demonstration of physical education activities in the Greek Theater.

We are planning to organize our local forces so that visiting delegates will be supplied with guides and such information concerning local conditions as will enable them to investigate and see everything without loss of time and energy. For illustration, we now have a committee at work upon the classification and location of all exhibits in the Panama Pacific International Exposition, which in any way bear upon physical education, play or recreation.

E. B. DEGROOT,

Chairman Program Committee.

THERAPEUTIC SECTION PROGRAM.

1. T. J. Berggren, M. D., Coronado, Cal. "Breathing and the Discoveries of Dr. Halls Dally." Discussion led by E. H. Arnold, M. D., New Haven, Conn.

2. Bertha Ebbs, M. D., Dedham, Mass. "Gymnastics from the Physician's Standpoint." Discussion led by R. Tait McKenzie, M. D., Philadelphia, Pa.

3. Baroness Rose Posse, Boston, Mass. "Gymnastics and Motherhood."

The attractive pictorial folder published by the Chicago, Burlington & Quincy Road which has been mailed to the members is the authorized itinerary by the special committee of the National Council. A splendid trip has been arranged for stop-

over at Denver, Colorado Springs, Salt Lake City and Los Angeles. The society at Salt Lake City is making special arrangements to entertain the delegates. The friends of members may be included in this group. If additional folders are needed, write to the Chicago, Burlington & Quincy R. R., 1184 Broadway, New York, N. Y. The rates are given in the folder.

**THIRD ANNUAL CONFERENCE OF THE MIDDLE WEST
SOCIETY OF PHYSICAL EDUCATION AND HYGIENE,
AT THE UNIVERSITY OF CHICAGO, APRIL 30
AND MAY 1, 1915.**

PROGRAM.

FRIDAY.

10.00 a.m. Kent Theater.

- I. President's Address.
Dr. Dudley B. Reed, Department of Physical Education, University of Chicago.
 - II. "Present Opportunities for Physical Education."
Professor Shailer Mathews, Dean of the Divinity School, University of Chicago.
Discussion opened by Professor George W. Ehler, University of Wisconsin, and Professor William P. Bowen, Michigan State Normal College.
 - III. "The Moral and Social Values of Physical Education in the Secondary School."
Principal Franklin W. Johnson, University High School, University of Chicago.
Discussion opened by Miss Ethel Perrin, Supervisor of Physical Education, Detroit Public Schools, and Dr. J. B. Modesitt, Physical Director, Detroit Y. M. C. A.
- 12.30 p.m. Luncheon. Men's Commons. 50 cents.

SECTION MEETINGS.

2.00 p.m.

Public School Group. Bartlett Faculty Gymnasium.

Chairman, Mr. Henry Suder, Supervisor Physical Education, Chicago Public Schools.

- I. "Moral Ends in Physical Education."
C. F. Weege, M. D., Physical Director, Carl Schurz High School.
 - II. "The Social Aspects of Physical Education."
Professor William B. Owen, Principal of the Chicago Teachers College.
 - III. "Dalcroze Eurhythmics" (with illustrations by class).
Lucy Duncan Hall, American Conservatory of Music and the Hinman School of Dancing.
- Y. M. C. A. Group. Reynolds Club.
Chairman, Dr. J. B. Modesitt, Detroit Y. M. C. A.
- I. "Helpful Results of Numerous State Standardization Conferences held by Dr. George J. Fisher."
Dr. Henry F. Kallenberg, Y. M. C. A. College.

- II. "Possibilities of the Water Gymnasium."
George M. Pinneo, Gary, Indiana.
 - III. "Our Indoor Summer Activities."
George M. Martin, Central Y. M. C. A., Chicago.
- Playground and Recreation Group. Kent Theater.
Chairman, John R. Richards, Superintendent of Recreation, South Parks, Chicago.
- I. Social Dances: "Place and Problems in Recreation."
Miss Neva Boyd, Director of Recreation Courses, Chicago School of Civics and Philanthropy.
 - II. "The Indoor Gymnasium: Problems of Operation in a Recreation Center."
Mr. Julius Rainwater, Director of Ogden Park.
 - III. "The Community and Recreation."
Mr. Charles F. Weller, Associate Secretary, Playground and Recreation Association of America.
- Open discussion of fifteen minutes after each paper.

Women's Colleges.

- Chairman, Dr. J. Anna Norris, Director Physical Education for Women, University of Minnesota.
- I. "Improvement of Habit Hygiene."
Dr. Alice L. Goetz, University of Kansas.
 - II. "Menstruation and the College Girl."
Dr. Margaret L. Johnson, University of Wisconsin.
 - III. "The Women's Athletic Association and the Department of Physical Education."
Miss Gertrude E. Moulton, University of Illinois.
- Twenty minutes of discussion on each subject.

Men's Colleges. Medical Examiner's Office, Bartlett Gymnasium.

Chairman, Professor George Ehler, University of Wisconsin.

Round Table Discussion of the following:

- I. "To What Extent do the Present Practices Prevent Securing Social and Moral Values?"
(a) Upon the general student body.
(b) Upon non-college youth.
 - II. "What Means Can be Adopted to Secure Constructive Results?"
 - III. "The Attitude of College and University Faculties to Physical Education. How can It be Made More Intelligent and Favorable?"
 - IV. "Practical Methods of Developing Intramural Athletics."
- Several men have been asked to open the discussions.

4.00 p.m. Demonstration of Physical Activities. Bartlett Gymnasium.
Chairman, Joseph S. Wright, Francis W. Parker School, Chicago.

- I. Boy Scouts of America.
- II. Swedish Gymnastics.
Girls of Chicago School of Physical Education and Expression in charge of Dr. Colin.
- III. Apparatus Work. Chicago Public Schools.
- IV. Mass Dance. South Parks.
(a) New Zardas.
(b) Hungarian Military Dance.
- V. Scotch Reel. Pupils of Donald Forbes.
Donald Forbes on the Pipes.

6.30 p.m. Dinner. School of Education Lunchroom.

- 8.00 p.m. Demonstration of Physical Activities (continued). Bartlett Gymnasium.
- I. Special Apparatus Work. Sears-Roebuck Department of the Y. M. C. A.
Mr. J. S. Andresen in charge.
 - II. Athletic Drills. Hebrew Institute.
(a) Boxing; (b) Wrestling; (c) Basket ball.
 - III. Circus. South Parks—Russel Square.
 - IV. Dances. Pupils of Madeline Buton Hazlet.
Cycle of the Seasons.
The Spirit of Spring, Alice Wanger Tweetie.
Summer, Helen McDonald.
Autumn, Elizabeth Moos Redhaffen.
Winter, Dorothy Stiles.
 - V. Heavy Apparatus Work. Turner Societies.
- 9.30 p.m. Demonstration of Aquatic Activities. Bartlett Natatorium.
(Limited to members only on account of the small seating capacity.)
Chairman, Mr. Joseph White, Instructor in Swimming, University of Chicago.
- I. Methods of Teaching the Crawl, Breast and Back Strokes.
Mr. Joseph White, University of Chicago.
Mr. Thomas Robinson, Northwestern University.
 - II. Demonstration of Correct Methods of Swimming above Strokes.
The Crawl—Mr. Johnson, Northwestern University, Western Conference Champion.
The Breast—Mr. Scholes, Northwestern University.
The Back—Mr. Pavlicek, University of Chicago, Western Conference Champion.
 - III. The "Aquatic Day's Order."
Dr. Henry F. Kallenberg, Director Department Physical Education, Y. M. C. A. College, Chicago.
 - IV. Exhibition of Fancy Diving, Peter Guzik.
 - V. 160-yard Relay Race.
University of Chicago vs. Northwestern University.

SATURDAY.

10.00 a.m. Kent Theater.

- I. "Suggestions for a Greater Physical Education."
Mr. G. E. Johnson, Department of Play and Recreation, New York School of Philanthropy.
Discussion opened by Dr. E. A. Peterson, Director Medical Inspection and Physical Education, Public Schools, Cleveland, Ohio.
Mr. John Richards, Superintendent Recreation, South Parks, Chicago.
- II. "The Relation of Motor Activities to Health and Education."
Dr. F. E. Leonard, Professor of Physical Training, Oberlin College.
Discussion to be opened by Miss Frances Musselman, Director of Physical Education, Francis Parker High School, Chicago, and Dr. R. G. Clapp, Professor of Physical Education, University of Nebraska.
- III. Business Session.
(a) Financial Report.
(b) Reports of Elections of Group Representatives.
(c) Election of Officers.
(d) General Business.

THE ORGANIZATION.

The Middle West Society of Physical Education and Hygiene was organized April 27, 1912. Conferences and demonstrations were held April 26 and 27, 1912, and April 27 and 28, 1913. The meeting for 1914 was deferred in the interest of the national meeting, which was held that year in St. Louis.

Membership in the society is open to all persons interested in the welfare of physical education and hygiene. The annual dues of \$1.00 are payable to the secretary-treasurer before or during each conference.

The society is made up of the following group units, whose representatives are named opposite the group. Two members at large are elected by the society. The representatives elect their own officers.

Colleges and Universities, Dr. Dudley B. Reed (President), University of Chicago.

Public Schools, Mr. Henry Suder (Vice-President), Chicago Public Schools.

Private Schools, Mr. Joseph Wright, Francis Parker School, Chicago.

Y. M. C. A., Dr. J. B. Modesitt, Detroit Y. M. C. A.

Playgrounds, Mr. John Richards, South Parks, Chicago.

Turnvereins, Mr. C. L. Jones, Milwaukee, Wis.

Y. W. C. A., Miss Ruth Leonard, New Trier High School, Kenilworth, Ill.

Normal Schools, Mr. William P. Bowen, Michigan State Normal, Ypsilanti, Mich.

At large, Mr. E. B. DeGroot, formerly of the Chicago Playground Association, now of the Public Schools, San Francisco, Cal.

At large, Dr. W. J. Monilaw (Secretary-Treasurer), School of Education, University of Chicago.

COMMITTEE ON DEMONSTRATION.

Mr. Joseph Wright (Chairman), Francis W. Parker School.

Miss Margaret Bell, Englewood High School.

Mabel M. Wright, Schurz High School.

Mr. J. S. Andresen, Sears-Roebuck Y. M. C. A.

Mr. Leopold Grand, Turner Societies.

Mr. H. G. Reynolds, South Parks.

Membership.

1912.....	119	1914.....	no meeting
1913.....	269	1915.....	?

RESOLUTIONS CONCERNING THE LIFE AND WORK OF
JAKOB BOLIN.

The American Physical Education Association wishes to put on its permanent records some expression of its personal sorrow, appreciation of, and its professional loss in the death of Prof. Jakob Bolin of the University of Utah. On May 15, 1914, our co-worker and much loved friend, the great teacher of so many of us, died in the midst of his work and among his warm friends. He had been with us for twenty odd years and in all that time he had impressed us with his sincerity, his honesty, his clear vision, his working power, his inspiring enthusiasm, his passion for teaching, his faith in humanity and his love for

his fellows. To have known him was to have a knowledge of a life enriched by difficulties, and to have worked by his side was an inspiration, for his vision was so far and broad that he made every view of life rich with meaning and possibilities, and nothing was common or unworthy. He did much for technical gymnastic knowledge in this country, but he did even more in illustrating the sympathetic, unselfish life of the teacher, so that to-day he still lives in many a gymnasium and schoolroom.

He had won his way to merit alone from a position as stranger at the Nation's gate to the professorship of hygiene and physical education in the University of Utah, where he had served four years. He had taught in the Brooklyn and New Haven Normal School of Gymnastics, in the New York Normal School of Physical Education. He had been an active member in our Association and he had helped many to health by his personal treatments. Our comment on it all is "well done."

Be it resolved, therefore, that in the death of Jakob Bolin, the American Physical Education Association has met with an irreparable loss and from the members of the physical training profession has been removed a friend, guide and counselor. Be it further resolved, that the Association, through this committee, extends its sympathy to Mrs. Bolin in her bereavement.

J. W. SEAVER.*

BARONESS ROSE POSSE.

J. H. MCCURDY.

AMERICAN SCHOOL HYGIENE ASSOCIATION.

The next meeting of this Association will take place in the City of San Francisco, June 25 and 26, 1915.

Prof. Lewis M. Terman, Stanford University, Stanford, Cal., is chairman of the Organizing Committee and chairman of the Program Committee. All communications relative to this meeting should be addressed to Professor Terman.

Membership purchased in the American School Hygiene Association for 1914 entitles the holder to all privileges for membership for 1915. This action has been taken because the Association was unable to hold a meeting in 1914.

This meeting will take place immediately after the meeting of the American Medical Association.

PHYSICAL TRAINING CONGRESS, NATIONAL EDUCATION ASSOCIATION. OAKLAND, CAL., AUGUST 18, 1915.

Baroness Rose Posse, President, Posse Normal School, Boston, Mass.

Clara Gregory Baer, Vice-President, Sophie Newcomb College, New Orleans, La.

May G. Long, Secretary, State Normal School, Everett, Wash.

* As we go to press, the newspapers give the sad news of the death of Dr. J. W. Seaver in Berkeley, Cal., a former president of the Association.

TEMPORARY PROGRAM.

Morning Session, General Subject, "Playgrounds."

- 9.00 a.m. Henry S. Curtis, Olivet, Mich., "Play in the School Curriculum."
 George E. Dickie, Supt. Recreation Dept., City of Oakland, Cal., "Organization and Management of Playground and Recreation Centers."
 Harriet W. Thompson, Dept. of Physical Education, University of Oregon, Eugene, Ore. (Subject to be announced.)
 E. B. DeGroot, Director of Physical Education, San Francisco, Cal., "The Next Steps in the Development of Public Playgrounds."
 Everett C. Beach, M. D., Director of Physical Training, Los Angeles, Cal. (Subject to be announced.)

Afternoon Session, General Subject, "Physical Training."

- 2.30 p.m. Dr. A. E. Winship, Member of State Board of Education, Boston, Mass., "Physical Training Essential."
 Dr. Jay W. Seaver, President Chautauqua School of Physical Education, "The Importance of Therapeutic Gymnastics in the Scheme of Exercises for Secondary Schools."

BALTIMORE PHYSICAL EDUCATION SOCIETY REPORT FOR 1914-15.

OFFICERS.

President, William Burdick, M. D.
 Vice-President, Miss Alpine Parker.
 Treasurer, Miss Mary A. Foley.
 Secretary, Miss Katharine H. Willis.
 Representative to National Council, William Burdick, M. D.
 Executive Committee, Miss Lillia B. Otto, Mr. John Loret, Mr. Theodore Kistler.

January 8.—Election of Officers. Address by Dr. Alfred W. Brown. "Blood Pressure." Discussion of same by Drs. Welsh and King of Goucher College and Dr. Mary Sherwood. Folk dances taught by Misses Rodway and Myrsten of Goucher College Gymnasium.

February 19.—Address by Dr. Joseph E. Gichner of the University of Maryland, on "Fatigue." This followed a lesson in general gymnastics at the Turnverein Vorwaerts in which the members of the Society participated.

April 24.—Address by Dr. Joseph E. Gichner, "The Use of Hot and Cold Water in its Relation to Physical Training." Games taught by Misses Emma K. Fitts and Hazel V. Dennis.

November 12.—Lecture, "Pageants," by Mr. George W. Braden, Philadelphia Y. M. C. A. and Director of Lake George Pageants. Athletic dance taught by Mr. Adolph Pieker.

December 10.—Address by Dr. Joseph Gichner on "The Relation of Exercise to Heart Conditions." This talk was supplemented by specimens for examination and microscopic slides. Athletic dance, "La Marvella," Mr. John L. Clarke.

January 14.—Election of Officers. Address by Miss L. M. Haughwout of the Bard Avon School of Expression on "The Use of the Voice in Teaching Gymnastics." Russian dances taught by Mrs. Adolf Meyer.

March 6.—Address by Prof. David E. Wegelein, "Physical Education and the School." Floor gymnastics led by Mr. John Lorette and Dr. William Burdick.

Respectfully submitted,

KATHARINE H. WILLIS,

Secretary.

AN ACT GRANTING A CHARTER TO PLAYGROUND AND RECREATION ASSOCIATION OF AMERICA.

Section 1. Be it enacted by the Senate and the House of Representatives of the United States of America in Congress assembled, that Robert L. Bacon, New York, N. Y.; Grenville Clark, New York, N. Y.; Mrs. Arthur G. Cummer, Jacksonville, Fla.; Dwight F. Davis, St. Louis, Mo.; Henry P. Davidson, New York, N. Y.; Mrs. E. P. Earle, Montclair, N. J.; Mrs. Thomas A. Edison, West Orange, N. J.; Dr. Charles W. Eliot, Cambridge, Mass.; Dr. John H. Finley, Albany, N. Y.; Robert Garrett, Baltimore, Md.; C. M. Goethe, Sacramento, California; Mrs. Charles A. Goodwin, Hartford, Conn.; Dr. Luther H. Gulick, New York, N. Y.; Mrs. Francis DeLacy Hyde, Plainfield, N. J.; Mrs. Howard Ives, Portland, Maine; William Kent, Kentfield, Cal.; Gustavus T. Kirby, New York, N. Y.; G. M. Landers, New Britain, Conn.; H. McK. Landon, Indianapolis, Ind.; Joseph Lee, Boston, Mass.; Sam A. Lewisohn, New York, N. Y.; Harold F. McCormick, Chicago, Ill.; J. H. McCurdy, Springfield, Mass.; Otto T. Mallery, Philadelphia, Pa.; Walter A. May, Pittsburgh, Pa.; John T. Pratt, New York, N. Y.; Elihu Root, Jr., New York, N. Y.; Evelyn Sears, Boston, Mass.; Harold H. Swift, Chicago, Ill.; Clement Studebaker, Jr., South Bend, Ind.; Harris Whittemore, Naugatuck, Conn., together with such persons as they may associate with themselves, and their successors, are hereby created a body corporate of the United States of America by the name of Playground and Recreation Association of America to promote play, playgrounds and public recreation.

Section 2. The corporation hereby created shall have perpetual succession, shall have a common seal, and shall have power to sue and be sued in its corporate name. The corporation hereby formed shall have power, in its corporate name, to take and hold by bequest, devise, gift, purchase or lease, either absolutely or in trust for any of its purposes, any property, real or personal, without limitation as to amount of value, except such limitations as Congress shall hereafter impose, to convey or encumber such property and to invest or reinvest any principal and deal with and expend the income of the corporation. The

persons named in the first section of this act, or a majority of them, shall have power to adopt a constitution and by-laws for the government of the corporation and to fix thereby the quorum necessary to the transaction of corporate business at such number as they shall see fit. The meetings of the corporation hereby created may be held at any place within the United States of America.

Section 3. This act shall take effect immediately.

SAN FRANCISCO BOARD OF EDUCATION ADOPTS ELABORATE RECREATION PLANS.

Résumé of Mr. DeGroot's recommendations as published in *Recreation*, March, 1915, San Francisco:

At a meeting of the Board of Education on Tuesday, March 2, 1915, plans and recommendations of Mr. DeGroot for the handling of all matters pertaining to physical education, school athletics, public lectures and social centers were adopted. The plans adopted have for their main purpose the orderly, consecutive and thorough treatment of physical education as a subject in the school program and the direction of certain after-school activities, among both children and adults, promoted by the Board of Education. Excerpts from the plans adopted are given below, together with brief explanatory statements.

To insure orderly and consecutive handling of matters referred to above, there has been established a "Department of Physical Education, Athletics, Social and Lecture Centers."

The head of the department has been given the title of "Director of the Department of Physical Education, Athletics, Social and Lecture Centers."

The duties and responsibilities of the head of the department will be: "To give general direction and supervision to the work of the entire department and to all workers therein; outline suitable courses of physical education for the various schools and grades; formulate and enforce rules, regulations and methods in school athletics; organize, guide and direct social and lecture center developments; call and conduct meetings, study courses and institutes among workers in the department; take charge of planning and equipping gymnasiums, playgrounds and social centers; check all requisitions for supplies, tools and implements called for and distributed among workers in the department; maintain an inventory of all tools and implements entrusted to the department; represent the department and the Board of Education in all matters outlined herein; render regular and special reports to the Board; respond to any service imposed by the Board of Education."

Aids to the head of the department have been provided for as follows:

"One Supervisor (man) of Athletics, Play and Achievement in Elementary Schools." Mr. Eustace M. Peixotto has been appointed to fill this position.

"One Special Instructor (man) in Physical Training Work." Mr. George S. Michling will fill this position.

"Four District Supervisors (women) of Physical Education in Elementary Schools." These women will not be appointed at this time, but will be secured in time for full service at the beginning of the new school year.

The work of the department will be divided into three divisions, as follows:

1. "Division of Physical Education. Athletics, Play and Achievement in Elementary Schools."

2. "Division of Physical Education, Play and Athletics in High Schools."

3. "Division of Social and Lecture Centers."

The work of the first division will be under the direct supervision of Mr. Peixotto and the four women supervisors of physical education. The work of the second and third divisions will be under the direct supervision of Mr. DeGroot. The work at local points, i.e., High Schools, Social Centers, Lecture Centers and the Play and Achievement Work at Elementary Schools, will be placed, for the most part, in the hands of principals and teachers who are willing to serve after regular school hours for extra compensation. Details of the organization of the various divisions follow:

DIVISION OF PHYSICAL EDUCATION, ATHLETICS, PLAY AND ACHIEVEMENT.

This division represents a logical grouping of subjects and activities related to all schools below the high schools. For convenience and efficiency in operation and supervision, all schools have been grouped in four geographical divisions of the city. The four women district supervisors of physical education in elementary schools will supervise the work of physical education treated as a subject in the regular school program. They will guide the principal and regular teacher in carrying out the prescribed course of physical education and will establish each in her respective district a free, voluntary, after-school training course for teachers. The course will be principally a practice course in gymnastics, folk dancing, schoolroom and schoolyard methods. (The course will also aim to improve the health of all teachers who participate.) This woman will also

supervise the social dancing and girls' gymnastics conducted in social centers in her respective division.

The Supervisor of Athletics, Play and Achievement will supervise the work of the "Play and Achievement Leaders" and the work of the "Athletic Leaders." He will conduct a training course for athletic leaders, and arrange and conduct all athletic meets and tournaments of the elementary schools.

The local workers in this division will consist of (1) "Athletic Leaders" and (2) "Playground and Achievement Leaders." One athletic leader will be assigned to each group of five schools. They will take charge, after school hours, under the direction of the supervisor and approval of the principals of the schools involved, of organizing, coaching and preparing individuals and teams (boys only of grades 5 to 8) for competition in the meets and tournaments of the Public Schools Athletic League.

The Play and Achievement Leaders will be regular school teachers, one in each of the twenty schools selected, employed for after-school service. They will organize and lead, under the direction of the Supervisor and approval of the principal, the play of both boys and girls, in the school yard or school building, after regular school hours. They will promote, and keep the records of, the "Achievement League." The words "Play" and "Achievement" here represent a scheme of credits and honors to be given for the mastery of certain good games, and for the performance of work in connection with the home; for superior rank in school, and for social, mechanical and industrial accomplishments. The central idea is to give encouragement and educational direction to the leisure time of the child and to include not only boys who are eligible for athletic competition, but girls and boys of all ages and conditions.

DIVISION OF HIGH SCHOOL PHYSICAL EDUCATION, PLAY AND ATHLETICS.

The high schools will be regarded as a logical group to be treated apart from the type of operation proposed for the lower schools. The supervision of physical education, play and athletics in the high schools will come directly under the head of the department, with one man or one woman (or both) in charge of the activities in each school. The person engaged in each school may be either one of the regular high school teachers or a specialist, according to the conditions to be met in each school.

DIVISION OF SOCIAL AND LECTURE CENTERS.

This division represents a logical grouping of activities related to the use of school buildings at night. Certain school buildings will be used as lecture centers and certain other schools as social

centers. Both the lecture and social centers will be supervised by the head of the department and the principal or a teacher will be placed in direct charge of each of the lecture and social centers. Lecture centers will be operated two nights each month and the social centers, in most cases, five nights each week. When the social center work seems too heavy for teacher or principal, persons from outside of the school system may be employed to take charge.

The activities of each social center will be determined to a large extent by the physical facilities at hand and the character of the neighborhood involved. In general, it is proposed that our social center program aim to establish the following:

- (1) Community singing.
- (2) Hand work exchange.
- (3) Civic forum.
- (4) Recreational activities—dancing, dramatics, gymnastics, etc., according to facilities at hand.

The lecture center will aim to present to the neighborhood people, twice each month, a lecture from one of the following groups:

- (1) A group of lectures dealing with the business and industrial life, opportunities and possibilities of San Francisco.
- (2) A group of lectures dealing with the structure and operation of government—town, city, county, state and federal.
- (3) A group of lectures dealing with health, individual and community.
- (4) A group of lectures dealing with science, literature and travel.

The program and leadership of the various activities of the social center will be secured, as far as possible, out of the community. The more the social center is one of self-expression on the part of the community, the better. Special workers, however, will be employed to lead special activities. Lecturers for the lecture centers will, in most cases, be secured without pay.

PROPOSALS TO MEET THE NEED IN PORTLAND, MAINE, FOR CHILDREN'S PLAYGROUNDS AND WHOLE- SOME RECREATIONS.

I. *Create a Recreation Commission*, similar to those in a number of other cities, to operate playgrounds, to provide suitable places and equipment for outdoor recreation throughout the city, to organize seasonal sports, to provide skating surfaces, to provide more bathing places, and to conduct indoor recreations in buildings belonging to the city. The recreation commission pro-

posed would consist of five members, appointed by the mayor,—one from the school committee, one from the park commission, and three other citizens.

II. *Provide Playgrounds for Children in Thickly Settled Districts* by establishing a supervised ground in the most congested section; by continuing to support the grounds operated by the Civic Club; and by arranging for the supervision of the Fire Station lot, operated by the Portland Boys' Club, and the ground of the Portland Fraternity.

III. *Provide a Central Athletic Field on a Park Playground.* This will create and stimulate habits of healthy exercise in the open. Improvements on one of the fields will make possible a large number of organized activities and sports. This has long been the desire of those interested in the youth of Portland.

IV. *Provide Good Indoor Recreations in Winter.* The buildings of the Portland Boys' Club should be operated by this commission as recreation centers. As city property, these could also be used for certain school purposes, such as physical training and domestic science. As in 200 other cities, some of the school-houses can be used for neighborhood recreations, social purposes, and for certain sports.

V. *Secure a Permanent Recreation Superintendent,* as 100 other cities have done. A trained man will organize the playgrounds and athletic fields, spring, summer and fall. He will mean much for physical culture, play and athletics in connection with schools. He can help in establishing children's gardens, a movement of very great importance.

A trained man will organize park athletic fields, thereby greatly increasing their use, and introduce exercises, sports and recreation for persons of all ages. He can increase bathing and swimming facilities, and encourage manual training, domestic science and other valuable work for leisure time.

A recreation superintendent of the right kind will make the work of regular playground directors increasingly efficient and can secure a great deal of volunteer assistance. A great number of capable and enthusiastic workers will aid him in countless ways and without any expense to the city.

From the standpoint of economy it is better to spend money for playgrounds than to devote still larger sums to court procedure, truant and reform schools, and the care of disease. The police force has trebled in the last few years. Surely the city can afford to provide preventive measures more liberally.

PREBLE COUNTY, OHIO, PLAY DAY FESTIVAL.

Play is the very life of childhood, and we must give our best thought and endeavor to the solution of the play problem. Well-

equipped playgrounds should be provided for every school. Organized play under supervision, to a certain degree, ought to be a part of the school's activities every day. County athletic contests have great value in promoting organized play in rural schools, and to this end a play festival is arranged for the Preble County Schools. Teachers and parents are urged to encourage the children to train and enter these contests. Acknowledgment is hereby made of help from the Union County, Indiana, Athletic Association.

BY-LAWS.

1. The meet will be held at Eaton, June 5, 1915.
2. Events are to be divided into three departments: Track, field and display games. Each department will be supervised by a competent person, who shall have full power over his charge. He shall secure judges and all necessary assistants for his department, prepare the grounds, and provide all necessary equipment.
3. There must be at least three judges for each track event, and at least two judges for each field event. For the display games there must be three judges, who shall be from outside the county.
4. The *Display Games* must be chosen from those approved by the manager of display games. Each room contesting may play only one game. Some suitable games are: Drill, Folk Dance, Circle Dodge Ball, Bean Bag Ring Throw, Arch Ball, Stealing Sticks, Partner Tag, Last Couple Out, Catch of Fish, Cat and Rat, Lame Fox, Captain Ball, Three Deep. Teachers may select other ring games.
5. Display games are to be graded on a 100 per cent basis.
6. Classes for boys in the various events are: Below 80 lbs.; 80-100; 101-120; over 120. On the morning of June 5 all participants must be reweighed on the grounds by the official weigher. Contestants may move upward but not downward.
7. The classes for girls in the various events are: Girls below 13 years of age, and girls above 13.

8. *Field Events for Boys.*

Below 80: Baseball throw, running broad jump, standing broad jump, chinning, horseshoe pitch, 25 feet.

80-100 Class: Baseball throw, running broad jump, standing broad jump, chinning, horseshoe pitch, 30 feet.

101-120 Class: Baseball throw, running broad jump, standing broad jump, running high jump, chinning, 8-lb. shot-put, pole vault.

Over 120 Class: Baseball throw, running broad jump, standing broad jump, running high jump, chinning, 12-lb. shot-put, pole vault, discus hurl.

9. *Track Events for Boys.*

Below 80: 40-yard dash, 40-yard relay, 440-yard run, potato race.

80-100 Class: 50-yard dash, 50-yard relay, 440-yard run, potato race.

101-120 Class: 75-yard dash, 75-yard relay, half-mile run.

Over 120 Class: 100-yard dash, 100-yard relay, half-mile run.

10. *Field Events for Girls.*

Under 13: Basket ball throw, 10 feet from goal, baseball throw, horseshoe pitch, 20 feet.

Over 13: Basket ball throw, 15 feet from goal, baseball throw, 8-lb. shot-put.

11. *Track Events for Girls.*

Under 13: 40-yard dash, 40-yard relay, potato race.

Over 13: 75-yard dash, 75-yard relay, potato race.

12. Eight minutes will be allowed each room for its display game.

Each relay team shall consist of four members.

In horseshoe pitching, the stakes shall be four inches above ground and incline toward the pitcher at an angle of $67\frac{1}{2}$ degrees from ground. Each contestant will be allowed to pitch four shoes. Scoring will be as follows: A ringer counts 5; a leaner, 3; a shoe resting one inch or less from stake, 1; a shoe two inches or less from stake, 9-10; a shoe three inches or less from stake, 8-10, etc. Shoes more than ten inches from stake do not score.

In chinning the head must be lowered below the bar each time, and the chin must be distinctly hooked over the bar each time.

In the potato racing, eight potatoes will be placed in a pile, 25 feet from the basket and the contestant must carry them one at a time to the basket. Each potato must be in the basket before he starts for the next.

The intercollegiate discus will be used. Each contestant shall have three trials.

All boys entering the half-mile run must present to the secretary of the Board of Control a certificate from a physician showing that he is physically able to enter such race. This certificate must be presented by June 4.

In the shot-put, each entrant shall have three trials.

In the broad jump, each entrant shall have two trials.

In the high jump and pole vault, each entrant shall have three trials at a mark before he is dropped out.

In the baseball throw, each entrant shall have one throw.

In the basket ball throw, each girl will be allowed to throw until she has missed three times.

13. Athletic events are to be scored as follows: First, 5 points; second, 3 points; third, 1 point.

14. Badges of merit will be awarded winners in each athletic event. A banner will be awarded the school winning most points in athletics; a banner to the school having the highest average per pupil. In computing this average the sum of points made in athletics and in display games shall be divided by the number of pupils enrolled in the school on April 23, 1915. This average shall be multiplied by 100, in each case, and to it shall be added the per cent of attendance of the school, obtained by dividing the number present on field day by the number actually enrolled in the school.

15. Not more than two entries from a school may be made in any one event.

16. All entries must be sent in to the Secretary of the Board of Control by May 29.

17. A high school shall be considered a school and the eight grades as one school.

THE STANDARD ATHLETIC TEST OF NEW YORK.

The boy under thirteen years who can run 60 yards in 8 3-5 seconds, chin a bar four times, and jump 5 feet 9 inches standing, is awarded the Standard button.

THE DEPARTMENT OF EDUCATION, THE CITY OF NEW YORK SIXTEENTH ANNUAL REPORT.

The section of physical training and hygiene gives a good illustration of administrative methods for school reports. Dr. Maxwell says, in submitting the report to the Board of Education: "The management of the after-school athletic centers, under Dr. Crampton's supervision, sets a new standard for economy and possibly also for efficiency in playground management."

UNIVERSITY EXTENSION BULLETIN.

A number of bulletins are now being issued by the Universities or State Departments of Education. Illustrations of these are found in the bulletins published by the University Extension Division of the University of Kansas, Lawrence, Kans. Vol. XI, No. 2, Part I, Social Betterment Series No. 1, gives general information regarding playgrounds and parks. Vol. XV gives general information regarding the organization of clubs, lectures, entertainments and plays for high schools. Vol. XVI, November, 1914, No. 2, discusses child welfare, particularly with reference to constructive juvenile work. The pamphlet is thoroughly practical. Bulletin No. XL, Part 2, January, 1915, published by the University of South Carolina, Columbia, S. C., is on athletics for high schools, with rules and regulations governing inter-high school athletics and organization of contests. It also includes suggestions as to coaching, dieting and training.

MINIMUM SANITARY REQUIREMENTS FOR RURAL SCHOOLS.

A joint committee on health problems and education of the National Council of the National Educators Association and the American Medical Association, have recently published an attractive pamphlet on the minimum sanitary requirements for rural schools. This pamphlet was published by Dr. Thomas D. Wood, chairman of the committee and professor of physical education and hygiene at the Columbia University, New York City. The pamphlet is published by the American Educators Association, 535 North Dearborn Street, Chicago, Ill.

California legislature has introduced two bills of interest to physical educators. The first bill creates a state recreation commission composed of five persons appointed by the governor for a four-year term. Second, a bill requiring physical culture in all public schools.



RIGHT- AND LEFT-HANDED PITCHER.

The photographs illustrate Mr. H. E. Aylward, one of the pitchers at Middlebury College for the current year, who pitches equally well with either the right or left hand. Some games are pitched left-handed, some right-handed, and still others when Mr. Aylward pitches either with his right or left hand, batters and base runners not being able to determine which arm he will use in pitching until the actual delivery begins.

BOOK REVIEWS.

OUTDOOR ATHLETIC TEST FOR BOYS. By *John Brozen, Jr., M. D.* Published by *Association Press*, 1913. 40 pp. Paper, 20 cents.

Dr. Brown has brought together a very attractive booklet full of definite information regarding events, score table and general methods of administration particularly designed for the rural schools.

MANUAL OF PHYSICAL TRAINING, GAMES AND MASS COMPETITIONS. By *Charles H. Keene, M. D.* Published by the *World Book Company*, 1915. 124 pp. Price, cloth, 72 cents; Kraft paper, 30 cents.

This manual of physical training lessons, of games and mass competitions will be of real help to elementary school-teachers. The book also contains a simple constitution for the organization of a school athletic association. Many of the simple games have summaries of the rules given.

THE NEXT GENERATION, A STUDY OF THE PHYSIOLOGY OF INHERITANCE. By *Frances Gulick Jewett.* Published by *Ginn & Company*, 1914. 235 pp. Price 75 cents.

This book is one of the attractive books of the season, particularly adapted for the use of boys and girls in their instruction along the lines of inheritance and the problems of personal life related to the sexual life. The book is adapted for classroom instruction. The splendid illustrations included will aid in interesting the children. The moral perspective of the book is ideal. A supplement has been issued by Ginn & Company which takes up some of the phases of the problem not advisable to place in the school text-book. This supplement can be secured by teachers or parents.

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JAMES HUFF MCCURDY, M.D., Editor

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AMERICAN PHYSICAL EDUCATION REVIEW

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THE BLOOD PRESSURE IN THE LEG IN VARIOUS POSITIONS; THE BRACHIAL PRESSURE AFTER SHORT MAXIMAL EXERCISES; AND THE NORMAL PRESSURE IN PHYSICALLY TRAINED INDIVIDUALS. WITH AN APPENDED PRELIMINARY NOTE REGARDING THE BLOOD PRESSURE'S AUTO- NOMIC RHYTHM.

GEORGE VAN NESS DEARBORN, PROFESSOR OF PHYSIOLOGY IN TUFTS
COLLEGE OF MEDICAL AND DENTAL SCHOOLS, BOSTON, AND
THE PHYSIOLOGY OF EXERCISE, ETC., IN THE SARGENT
NORMAL SCHOOL, CAMBRIDGE.

From the Hemenway Gymnasium of Harvard University.

I. THE CRURAL BLOOD PRESSURE WITH THE LEG IN VARIOUS POSITIONS.

Despite the frequent importance in clinical medicine and surgery (as well as in physiologic theory) of a knowledge of the comparative blood pressures in different parts of the body, few observations on the matter appear to have been published. Surgery, and especially orthopedic surgery, would seem to have an interest worth while in the leg pressures in particular; yet little has been done. The published accounts found in rather inaccessible literature, were made in the developmental stage of blood pressure measurement, and would now probably be considered by most physiologists unreliable and withal too fragmentary to be of importance to systematic science. Yet, if the intricacies of vasomotor reciprocity and so forth are to be ever explored and explained, comparative blood pressure measurements, various in many respects, must be devised and carried out.

The present experiments compared the hydraulic pressure in the right human brachial artery (measured in the familiar way and with the subject in the sitting posture) with the pressure in the posterior tibial artery when the leg was in three positions: first, horizontal, the foot resting on another chair in front; second, in the standing posture; and third, vertical, the subject lying supine with the leg raised straight up and resting against a support to hold it, in part, in this unaccustomed position.

The subjects were thirty-nine in number, twenty-eight of them females, ranging in age from eleven years to thirty-two; and eleven of them males, the youngest twenty-one and the oldest sixty. The choice of the subjects in the whole research was entirely at random so far as choice was made at all, but each was a person of athletic habits and most of them well-trained athletes, all being students or instructors in the large physical education department of the Summer School of Harvard University, Cambridge. The work of the experiments was done between the third and the twenty-second of July, 1913, the atmospheric temperature much of the time being the rather high temperature of average New England July weather. The day's work was moderately strenuous, mentally and physically, and the majority of these first measurements were made in the afternoon. They represent, then, the normal conditions in healthy, active men and women, most of them "in their twenties," as "normal" as could be desired or found.

The blood pressure gauge employed was the rather clumsy, wide-cuffed Stanton, applied to the right arm above the elbow and immediately after to the left leg immediately below the gastrocnemius; in the latter position slight traction on a strap prevented the cuff from slipping toward the foot.

Occlusion of the brachial artery was determined in the old-fashioned way by palpation of the radial, and of the posterior tibial artery by palpation at a point usually about half-way between the middle of the internal malleolus and the heel, at the place where it is customary to make sphygmographic records for measuring the pulse wave and for other physiologic purposes. It is recommended that this palpation method of ascertaining occlusion (or patency) be wholly abandoned for the far more precise method of auscultation, thus doing away with the observer's personal equation. In cases in which great and immediate accuracy is important, it is easy to have the subject indicate when he feels the blood stop flowing (or flow) through the artery, to listen with the stethoscope over the lower end of the brachial, on the inner portion of the flexor fold at the elbow, and to palpate the radial artery with the fingers; all three methods used together give an extremely definite measurement after a little practice. These readings were made with the mercury column slowly rising, this being perhaps preferable on grounds

of physics to measurements on the falling pressure. On the other hand, the fall of the manometer mercury with the usual slight leak of the apparatus is slower and more constant than the rise can easily be made, and thus sometimes more delicate measurements are possible.

The following table shows the numerical results of this portion of the research and is self-explanatory.

CRURAL BLOOD PRESSURES

Subjects	Age	Sex	Brachial Pressure	Posterior-Tibial Pressure, Leg Horizontal	Leg in Standing Posture		Leg Vertically Upwards	
					Posterior-Tibial Pressure	Percentage of Brachial Pressure	Posterior-Tibial Pressure	Percentage of Brachial Pressure
1	22	F.	110	145	140	127	110	100
2	23	F.	150	150	175	117	120	80
3	24	F.	115	135	---	---	50	43
4	20	F.	105	130	---	---	---	---
5	11	F.	105	120	145	138	60	57
6	39	M.	111	150	145	131	65	59.5
7	20	F.	125	140	150	111	68	55.5
8	34	M.	105	135	210	200	80	76
9	23	F.	117	147	185	158	57	50
10	26	F.	100	120	110	110	80	80
11	24	F.	110	140	165	150	Indeterminable	---
12	22	F.	110	145	Indeterminable	---	Indeterminable	---
13	25	F.	130	135	175	130	75	58
14	17	F.	103	123	175	170	Indeterminable	---
15	25	M.	135	145	185	137	60	53
16	(25)	M.	105	160	150	143	45	43
17	34	F.	115	138	Indeterminable	---	---	---
18	60	M.	165	230	285	173	130	88
19	29	M.	121	150	145	120	Indeterminable	---
20	21	M.	110	145	137	125	70	64
21	32	F.	123	155	165[1]	134	60	49
22	22	F.	90	120	95	106	56	62
23	23	F.	127	140	110	87	Indeterminable	---
24	34	M.	118	148[2]	185	157	75	63.5
25	21	F.	143	140	135	94	80	55
26	23	F.	135	150	180	133	80	59
27	42	M.	105	132	150	143	70	67
28	27	F.	105	150	180	171	60	57
29	25	M.	115	125	180	157	70	61
30	26	F.	115	140	155	135	---	---
31	24	F.	108	110	---	---	58	54
32	19	F.	116	123	160	138	73	63
33	21	F.	93	94	66[3]	171	55	59
34	19	F.	127	160	165[4]	130	67	51
35	23	F.	125	130	180	144	65	52
36	11	F.	103	103	140	136	58	56
37	26	F.	97	120	140	157	Indeterminable	---
38	32	F.	120	140	160	133	80	67
39	26	M.	120	120	Indeterminable	---	---	---
Averages				116.2	138	154.25	70.8	---
Percentages				100	118	133	60.8	---

[1] "Sensation of constriction in the other leg."

[2] Heart rate, 56.

[3] Mitral incompetency.

[4] Dancing for one-half hour just before.

(The average in all these present statistics is practically as accurate as the mean, the variation here being either well counterpoised or slight.)

One sees, in general, that the average brachial pressure of this chance set of subjects seated in a chair with elbows resting on its arms was 116.2 mm. of mercury (a millimeter less than the average made from 112 subjects of part third of these measurements, *q.v.*).

We have included No. 33 in this average, quite as valid here as the mean, for although she was found to have a fairly well-marked mitral insufficiency, one person out of thirty-nine is certainly not an excessive proportion even of young adults to be handicapped by compensated cardiac lesions, and our present aim is to represent conditions as actually found in life, thus making the work more practically useful to medicine and surgery. Although the heart rate of No. 24, namely, 56, is not uncommon among athletes, medical practitioners should realize the relative frequency of these low pulse rates even in young women.* From the Sargent Normal School this spring was graduated a young woman (C. L.) with a fine heart, beating on the average rather less than forty times per minute, and yet her after-lunch resting blood pressure was 125 mm.; during an attack of typhoid, of average severity, a few years ago, her heart rate went only to 73.

A. The pressure in the posterior tibial artery with the whole leg horizontal was found to be 18 per cent higher than the brachial pressure so generally used as a basis, obviously an arbitrary one, for comparison.

B. The posterior-tibial pressure when the subject is standing is 11.7 per cent higher than when the leg is horizontal, resting on another chair. It is almost 118 per cent more than the pressure in the same artery when the leg is held vertically upwards. That the "standing pressure" is not more than this, we must ascribe in large part probably to the valves of the veins and to the rhythmic compression of the vessels by the femoral muscle masses described by Kaufman,† as under control of the sympathetic.

These crural blood pressures suggest how greatly the pressure varies in the different arteries of the body despite the fact, formerly emphasized unduly, that they all derive their pressure directly and indirectly from the same (ventricular) muscle. How much this local variation depends on adrenalin (epinephrin) as Von Anrep has pointed it out, how much on CO₂, as Itami suggests, and how much on arterial structure and posture, remains to be worked out. These figures, too, suggest that the

*See S. McC. Hamill: "Developmental cardiac conditions," *Proc. Am. School Hygiene Association*, IV., 1912, pp. 179-189.

†P. Yu Kaufman: "The afferent nerves of the arteries," *Voenno-med. Journal*, St. Petersburg, 1912, CC, XXXIV.

influence of gravitation is considerable in determining the pressure, for inversion of the leg more than halves the posterior tibial pressure. If we may use this principle elsewhere, it implies that the still unmeasured normal pressures in the arteries of the brain are probably less than we have usually supposed. This indicates the clinical importance of maintaining a person who has had any cerebral extravasation, in a vertical or at least sitting posture, if possible permanently, avoiding every occupation and place, for example, shipboard, in which the head is liable to go lower than the heart. Here is apparent sanction for further refinement in the care of many classes of patients.

It is regretted by the writer that the limited summer time of the research, together with a lack of the requisite apparatus, prevented the simultaneous taking of the pressures in different arteries under various conditions of exercise, posture, sleep, eating, heart rate, training, age, sex, tobacco, etc. The writer's new barhemeter* now opens the way, at least, for such measurements, and they, more than any other kind of studies, perhaps, would throw the much-needed light on the basal physiology of vasomotion, so highly important and yet so little really known.

Obviously some adaptation to the rather curious habit of standing and walking on the hind legs has gone on in the perhaps half-million years since our ancestor was a consistent quadruped, for the hydraulic pressure pure and simple would be much more than 155 mm., even in a column of moving liquid.

C. The pressure in the posterior tibial artery when the leg is held vertically upward, but without exertion, the trunk or torso being supine, is less on the average than 71 mm., even in athletics. This is nearly 61 per cent of the brachial standard with the person sitting. The lowest pressure measured was 45 mm., but only because palpation was used as an indicator instead of the more delicate and definite auscultation. By palpation, as the table shows, the moment of occlusion could not be determined in several cases, but it is proper to suppose that in these the tibial pressure was less than the measured minimum. The test was never made immediately after the elevation of the leg, so that probably in every case the circulation in the limb had regained the equilibrium lost by its elevation.

These low numbers suggest that possible benefit might accrue to sundry patients were change in posture carried out more adequately than it now is in most clinics.

The remark volunteered by the subject No. 21 (a young woman teacher, thirty-two years of age, with a B. A. degree), that she had a "sensation of constriction in the other leg" is of much psychologic interest at least, and suggests something physiologic which is inherently probable, namely that the vasomotion proper

* See *The Medical Record*, New York, '84, 8, 23, August, 1913, 342, illustrated.

or else the rhythmic cross-striated muscular action, or both, is symmetrical in its action at least in the legs. This experience, it is likely, would be reported oftener in blood pressure work did not the novel sensation of constriction and its resulting numbness and tingling in the fingers attract and keep on itself the subject's attention. Here the epicritic and the "deep" sensibilities merge with the proper kinesthesia in a way that would be interesting to investigate. As has been already noted, the subject can readily feel the blood-stream when it makes its way through the occluded artery.

II. THE BLOOD PRESSURE AFTER SHORT MAXIMAL PHYSICAL EXERCISES.

The original intention of the following experiments was to measure the blood pressure and the heart rate in a number of strenuous and difficult, yet common, physical feats which involve, most of them, *athletic prowess and skill*. The application of such data and measurements to routine physiology and to therapeutics is obviously that they serve as a *logical limit of exertion* for the run of men, few of whom, however, could equal these performances or do so save at several kinds of personal risk.

The extensive literature on the various phases of blood pressure in relation to bodily exercise, involving both somatic (sympathetic) and technic (spinal) skill,* clearly needs supplement by perhaps equally extensive and careful work on its relations to emotional stresses so far as these involve the autonomic nervous system in both its acute and chronic conditions. There certainly is known no test of the instability of the nerves governing the human vegetative mechanism more reliable or more ready than the variability of the blood pressure from moment to moment. The important affective factor has commonly been ignored, but its influence is frequently supreme. It is not obvious just how much this sympathetic factor, compounded always of neural and chemical agents, adrenalin especially, has to do with the numerous tests of exercise blood pressures reported in the literature. The familiar researches of Hill, Otis, Bowen, McCurdy, Pachon, Masing, Erlanger, Shumacker, Gumprecht, Moritz, Oertel, Crile, Filehne, Biberfeld, Itami, Von Anrep, Crampton, Hooker, Wolfsohn, Heilemann, Pembrey, Baldes, etc., Lowsley, and the rest, every one of which seems to be a valid and therefore important contribution to the physiology of blood pressure, take little account of this basal determinant. My present work on the blood pressure of young women fresh

*G. V. N. Dearborn: "A Contribution to the Physiology of Kinesthesia," *Journal für Psychol. und Neurol.*, XX., 1 and 2, Jan., '13, 62-72.

from their homes and the high school or college, has suggested how quickly and how markedly a sudden change may affect the height of the mercury column. Especially is nerve fatigue, more or less chronic, exhibited in this way, so that a pressure measurement every half-minute for several minutes is among the best of indicators of instability and fluctuation in the neurotension of the central nervous system, the "reservoir" of W. McDougall.

Such conditions of emotional fluctuation and neural fatigue were wholly lacking, or practically so (save as noted below), in the subjects of this section of these experiments. They were all trained, athletic people in apparently perfect health (except, again, as noted), most of them expert gymnasts; only two out of the twenty-two were females, and these with no hint of unstable nerves. They were mostly hardy, normal unemotional men, down, so to say, to the bedrock of natural but cultured manhood and womanhood unsullied by the "pace that kills" so many in their prime. Compared with a group of equal size taken at random from the crowd flooding a city's street, human, but irresponsible and uncertain, they constituted well-nigh ideal physiological material. Whatever vasomotor rhythms and variations are to be seen in these, therefore, are properly termed physiologic in the narrow sense of somatic as opposed to mental. Even on this basis the rapid variations in the pressures after the "stunts" form an interesting result of the present report, and constitute a topic of research of some probable importance in vasomotor physiology.

A word is expedient in the way of apology for the missing measurements and the frequent irregularity in the time-intervals. The work was done in the large and very busy gymnasium of a summer school where things had to be taken more or less as they already were, despite abundant authority for arbitrary disarrangement. The subjects were mostly teachers with good positions, not hired for this work but volunteers, often under persuasion, and often, too, at considerable sacrifice of one kind or another.

It is especially to be noted that the tests were very rapid work, most of them. The heart rate and the pressure were usually taken simultaneously, and sometimes (as often as possible) within *ten seconds* of the cessation of the exertion and seldom later than twenty or twenty-five seconds afterwards. The successive measurements then followed as fast as was possible (often at ten-second intervals) or as frequently as the changes that occurred required. The measurements of this section were made with a Rogers "Tycos" sphygmomanometer with a broad cuff. Practically all of the measurements were made in the afternoon, and at least half late in the afternoon after a day of rather strenuous work in the lecture room, laboratory and gymnasium. Under such conditions, average conditions of

freshness and fatigue, we may expect fairly mean results. These are all right brachial pressures.

A. The first form of exercise to be reported (the arrangement is alphabetical) is one that is coming into great and well-deserved popularity, here in America, at least, under the name of *athletic dancing*. It is practiced little save by men. Its name is suitable, for it is dancing that is true, human dancing, and it requires an athlete to do it at its best without rapid fatigue. It furnishes strenuous and all-round exercise well-nigh ideal in several respects. Its vehemency may be indicated in two of its usual features as it has been developed by Mr. O. L. Hebbert: "cart wheels" (side handsprings) and a systematized form of leap frog, both in quick tempo. An hour or even a half-hour of such dancing to rapid and stirring music constitutes an excellent test of the vasomotor apparatus, for it involves the active exercise of every part of the body and many contortions, far more so than any other single exercise known to the writer. The first subject reported is the instructor, Mr. Hebbert, one of the leading developers of this important exercise to its present systematic form which is at once scientific and artistic.

The table explains itself.

A. ATHLETIC DANCING

Subject and His Feat	Age	Sex	Time Intervals: Seconds	Heart Rate		Pressure	
				Before	After	Before	After
O. L. H. One hour, strenuous	52	M.	15 90 10 300		88	122	155 149 130
E. M. S. One-half hour	25	M.	40 90 240 129	101	116 110 89	110	93 110 100
M. E. T. One-half hour	25	F.	180		108	104	114
D. V. W. One-half hour, strenuous	21	M.	30 20 20 20	(56)	76 80	(98)	120 142 138 134 130

B. *Back flexion* was the second form of exercise studied in relation to blood pressure and heart rate. In this familiar "Swedish" practice the individual lies prone on a stool under the epigastrium, the former being about ten inches high. The torso is then flexed rhythmically from its over-extended posture as far as possible. When this is done twenty-five times per minute, as it was by one of the subjects, it is a rather severe athletic spurt.

B. BACK FLEXIONS

Subject and His Feat	Age	Sex	Time Intervals: Seconds	Heart Rate		Pressure	
				Before	After	Before	After
F. C. H. Twenty-five in 1 min.	23	M.	20	95	112	118	
			25				130
			20				136
			20				132
			20				130
			20				122
E. C. H. Twenty-two in 1.5 min.	25	F.	25	96	120	130	112
			10				126
			20				130
			20				122
			10				120
			20				112
			20				112
			20		80		112
			300		84		125

It will be observed that the young man's pressure rose without any preliminary lowering (unless come and quite gone in twenty seconds, which is unlikely), while the young woman's lowered to 112 from 130 and vibrated in a slow rhythm. These are two types of reaction, but there is no suggestion that they are sexual types.

C. In the third set of tests, *broad jumping* of a kind was used; the jumps were single in one direction and then the man quickly turned about and jumped back—and so on. H. D. B.'s idea, volunteered, that it was "an off day with him," is obviously not borne out by his blood pressure any more than by the great energy of his performance.

C. BROAD JUMPS

Subject and His Feat	Age	Sex	Time Intervals: Seconds	Heart Rate		Pressure	
				Before	After	Before	After
F. C. B. Twenty, fast	23	M.	20	108		107	
			20				
			60		165		134
			30		130		132
			30				124
			30				122
			30		112		128
			30				120
			60		108		120
			120		108		116
			120				110
F. B. B. Thirty, fast. Limit, "acute fa- tigue of the calf muscles"	24	M.	20	80		112	
			20				
			60		160		104
			20				100
			60				80
			60				112
			60				100
			60				106
			60				106
			90				118
			40				110
			60		90		112
			60				110
H. D. B. Thirty in 1 min. ("Off day")	28	M.	20			112	
			20				
			20				120
			120				108
			120				122
			120				108
			120				122
			120				120
			120				118

D. The fourth kind of feat employed as a test for blood pressure was the varieties of somersaults called in the gymnasium *hand springs* and *head springs*.

In these obviously there is an overturning of the body, and gravitational factors enter the vasomotor reactions for the first time in our series. In three out of the five subjects the pressure at first was lowered and in the other two raised. Like differences, at present unexplainable will be seen again in other of the tests. Nothing that could be discovered by the experimenter in the men or in their training suggests an explanation of this suggestive difference.

D. HAND AND HEAD SPRINGS

Subject and His Feat	Age	Sex	Time Intervals: Seconds	Heart Rate		Pressure	
				Before	After	Before	After
F. C. B. Fourteen head springs in 30 secs.; dancing for 30 mins. before	23	M.	20 15 15 15 1860			128	120 132 140 135 108
F. B. B. Twelve head springs in 20 secs.; dancing for 30 mins. before	24	M.	10 15			112	80 140 127
H. D. B. Nineteen head springs in 45 secs.; dancing for 30 mins. before. "Limit of springs, dizziness."	28	M.	20 300 1800			120	115 122 132
I. E. B. Twenty-five head springs in 50 secs.	22	M.	20 10 10 90 90 30	88	120 120 112 96	128	136 150 154 138 120 130 128
D. V. W. Hand springs fast for 45 secs.	21	M.		56	107	100	141

F. *Snap-ups* (called by the Teutonic Americans *kip-ups*) consist essentially of jumping alternately on the hands and the feet backwards, the body being prevented from falling to the floor by the alternate extensions of the extremities. Only one man was practiced in this, but he was proficient.

E. SNAP-UPS

Subject and His Feat	Age	Sex	Time Intervals: Seconds	Heart Rate		Pressure	
				Before	After	Before	After
W. P.	23	M.	20	74	140	125	111
					120		120
					108		—
			180		106		124
			60		100		110
			60		96		110
			120		92		102
			60		—		100
			120		96		102
			190		—		102
			300		88		104
			180		86		110

The same general tendency in the rhythm of the pressures is to be seen here as in the handsprings, the vibration lasting on after the rate is well down and stationary. This would seem to suggest the close relationship between disturbance in the sense-complex of equilibrium and the vasomotor center, the same general association familiar to a less extent in seasickness and the rhythmic vasomotor activities of nausea and dizziness of whatever origin.

F. *Press-ups* consist of raising the inverted body on the arms from the floor to the position of "hand balance." They represent, then, not only the vigorous exertion of the arms, but the well coördinated action of the trunk and legs for the maintenance of the inverted equilibrium. The press-up is as hard, perhaps, to perform as any familiar gymnasium feat.

Subject F. C. B. intimates the possibility of a certain type of vasomotor reaction causing the pressure to remain low for some time, while D. V. W., an extremely "wiry" and strong-willed man, "alive in every fiber of his being," suggests the tendency of the pressure to remain relatively high. Nothing in the training of these two men known to the experimenter throws any light on this matter. It is one of many puzzling factors in vasomotology.

F. PRESS-UPS

Subject and His Feat.	Age	Sex	Time Intervals: Seconds	Heart Rate		Pressure	
				Before	After	Before	After
F. C. B.	23	M.		92		126	
Four press- ups to hand balance in 25 secs.			30		120		110
			20				114
			20				118
			20				118
			20		88		108
			20		104		114
			20		100		106
			20		92		104
			20		92		104
			60		—		110
			20		92		112
			20		—		116
			20		92		116
			120				116
H. D. B.	28	M.				129	
Five press- ups to hand balance in 25 secs.			20				121
			20				138
			60				122
			60		76		122
D. V. W.	21	M.		64		120	
Six press-ups to hand balance			15		100		124
			12				130
			10				136
			15				138
			15				140
			15				138
			15				138
			15				132
			15		70		130
			30				128
			30		66		124
			30				122
			20				124
			20		64		126

G. *Pull-ups*, often called "chinning," constitute a very familiar, but strenuous, exercise of the arms. To be able to do it at all or once or twice is many a sedentary layman's test of his physical "fitness."

We see from this erect exercise an immediate lowering of the pressure in one subject only, H. D. B., and then for only a short time, and a lowering in another, F. C. B., after four minutes. These men were both certainly well-trained athletes. Here again, then, is evidence of a basal difference in the mode of vaso-motor behavior whose explanation is lacking and needed.

G. PULL-UPS

Subject and His Feat	Age	Sex	Time Intervals: Seconds	Heart Rate		Pressure	
				Before	After	Before	After
J. B. Seven pull-ups in 15 secs.	27	M.	10 30 90	70	108 80 83	132	155 135 134
F. C. B. Fourteen pull-ups	23	M.	20 20 60 60 60 60	108	142 117 118 117	122	135 126 122 — 114
H. D. B. Thirteen in 35 secs.	28	M.	20 10 10 25 90 60 60	76	84 80	126	119 124 126 126 120 122 126
W. F. Twelve in 25 secs.	23	M.	10 20 15 15 15 15 15 120	84	108 92	124	138 144 148 146 146 142 138 134 130
P. D. H. Twelve in 40 secs. "Reverse grip"	23	M.	20 15 20 15 15 15 40 30 420	84	128 120 — 112 — 104 104 106 96	130	145 160 160 147 145 140 150 140 134

H. *Rope-climbing.* The standard gymnasium rope, two inches in diameter and about twenty-three feet long, was employed. Without the use of the legs this feat is very much more difficult than with their use. Subject F. C. B., it will be seen, did it both ways on different days and his pressure reaction corresponds in the less severe case by an initial rise, and in the other by a fall.

I. *Side-hangs* on the Swedish stall-bars (often called "flags" in the gymnasium). This exercise is a rather difficult and technical feat, requiring not only strong arms, but careful and active

H. ROPE-CLIMBING

Subject and His Feat	Age	Sex	Time Intervals: Seconds	Heart Rate		Pressure	
				Before	After	Before	After
F. C. B. Once and one-quarter up in 26 secs.	23	M.	20 90 60 60 60	96	120 108 100 100	124	132 124 122 116 118
F. C. B. (Another day) Once up (arms only) in 30 secs.	23	M.	20 35 120 60 120	97	100 100 92 100	120	112 120 113 111 109
H. D. B. Once up in 10 secs.	28	M.	20 120 60	74	104 84	120	140 128 129
I. E. B. Twice up in 75 secs.	22	M.	20 20 20 20 20	90	120 120 120 112	125	110 110 125 137 126
G. W. F. Thrice up in 45 secs. ("Active bar-work 15 mins. before")	29	M.	12 10 10 35 30 10 15 15	103	128 89	114	154 154 158 146 130 128 122 120
F. D. H. Once up (arms only) in 17 secs.	23	M.	30 20 20 20 40 15 15 240	84	130 92 88 88 84	130	150 150 138 136 129 132 130
R. W. N. Thrice in 35 secs. (This is fast)	23	M.	15 10 10 10 10 10 10 10 10 10 10 10 10 10	86	120 100	128	158 150 160 158 150 150 158 150 150 148 142 138 135 134
E. M. S. Once in 45 secs.	25	M.	15 10 10 10 10 10 10 10 10 10 10 300	96	140 101 96	108	110 120 130 132 120 120 110 100 100 104 98 96 96 104

coördination of the muscles of the torso. Subject H. D. B. reported that he was not practiced in this exercise.

I. SIDE-HANGS

Subject and His Feat	Age	Sex	Time Intervals:	Heart Rate		Pressure	
			Seconds	Before	After	Before	After
H. D. B. Three rises (last hold 5 secs.) in 20 secs.	28	M.	20		100	128	
			60				130
			30				130
			30				130
			30				128
H. N. Four secs.	58	M.		66		124	
			30				160
			30				160
			30				145
			30				138
			30				153
			30				146
			30	68			140
			30				140
			30				132

J. *Squatting* when done vigorously and fast is an exercise severe on the femoral extensors. The extremely regular decline of the pressure in the course of eight minutes in F. B. B. is perhaps worth noting; no rhythm is present.

J. SQUATS

Subject and His Feat	Age	Sex	Time Intervals:	Heart Rate		Pressure	
			Seconds	Before	After	Before	After
F. B. B. Sixty full squats, arms horizontal, in 85 secs.	24	M.	60	96	152	112	
			30				134
			15				132
			30				128
			15				122
			15		100		122
			15				120
			30				116
			30				112
			60				110
			120		104		
			60		100		104
			180				104
D. V. W. One hun- dred and sixty three- quarter squats in 150 secs.	21	M.	30	(58)	108	111	142
			90		90		
			150		88		133
			180				120
			120		80		114
			60				111
			60				106
			60				110

(TO BE CONTINUED.)

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A COURSE OF STUDY IN DANCING FOR HIGH SCHOOL GIRLS.

CARRIE VAN R. ASHCROFT, NEW YORK CITY.

WORK FOR THIRD TERM.

LARGE BEATINGS MOVING FORWARD AND BACKWARD.

Stand with the arms in second position and the right foot in fifth position back. Brush the right foot high into second position and replace it in fifth position front (1); and hold (2). Repeat with the left foot (3-4). Repeat right and left moving forward for sixteen counts or eight beatings (measures 1-8). With the eighth beating the left foot is in fifth position front. Begin at once to move backward. Brush the left foot sideways up and replace in fifth position back (1-2). Repeat right and left moving backward for sixteen counts or eight beatings. Arms in second position through the exercise; drop them sideways on count 16. Use music for beatings in first term or any strong polka.

PAS DE BASQUE.

Forward. Stand with the right foot in third position front. Leap to second position on the right foot bending the right knee slightly and carry the arms to second position (1). Slide the left foot through first to fourth position front (2). Close the right foot to third position back and instantly raise (cut) the left forward in preparation to repeat the step with the left foot. During counts two and three the arms move into fourth position right. Look forward over the bent left elbow; chest high; head lifted. Repeat forward left and change arms to fourth position left. There should be great abandon in the execution. The whole expression of the body should be lifted as in triumph.

Backward. Leap to second position on the right foot, bending the right knee slightly and carry right arm to second position (1). Slide the left foot through first position to fourth back (2). Close right foot to fifth (or third) position front (3). During counts 2 and 3 the left arm moves to first position. Repeat to left and change arms. The movements of the arms in the backward basque are not simultaneous. One arm moves sideways as you leap sideways on count 1 and the other arm follows to first position on counts 2 and 3. The shoulder joint is the center of motion. It is a common fault to have small, cramped movements of the arms making the elbow the center of motion. Use vigorous mazurka music for all exercises in pas de basque.

EXERCISES IN THE PAS DE BASQUE.

I.

Four pas de basque forward.
Four pas de basque backward (eight measures).

II.

Four pas de basque forward.
Two pas de basque backward.
Step backward right and turn right (eight measures).

III.

Two pas de basque forward (right and left).

Step sideways right and turn (two measures).

Repeat forward beginning left foot.

Step and turn to left.

Two pas de basque forward (right and left).

Step backward right and turn right (two measures).

Repeat backward beginning left foot.

Step backward left and turn to left (sixteen measures).

MAZURKA STEP.

Stand with the right foot in fifth position back; left arm raised high and right hand on hip. Slide the right foot sideways (1); bring up the left foot with a leap and instantly raise (cut) the right foot sideways (2). Hop on the left foot in place as you bend the right knee and carry the right foot to fifth position back and raised five or six inches from floor (3). Do the mazurka step sideways right three times and close with three stamps in place right, left, right. Change arms during the three stamps. Repeat the exercise sideways left. The mazurka step can be taken forward by sliding diagonally forward on count one.

EXERCISES IN THE MAZURKA STEP.

I.

One mazurka.

One pas de basque.

Combine one mazurka diagonally forward right, and one pas de basque sideways right. This frees the left foot to begin the combination with the left foot. It is a good exercise to take in couples around the room. If used in a classical series have left arm raised and right hand on hip for the mazurka sideways to right. Change arms to fourth position right for the pas de basque to right. Keep the right arm raised and place left hand on hip for the mazurka to left. Then swing arms up to fourth position left for the pas de basque sideways left.

II.

Two mazurkas.

One pas de basque.

Two stamps.

If moving to right, have left arm raised for the mazurkas. Swing arms to fourth position right for the pas de basque. Keep right arm raised and place left hand on hip for the two stamps.

BALLONNÉ.

Stand with the right foot in third position front and arms in third right. Look up at right hand. Raise the right foot sideways bending right knee, as a preparatory movement. Hop on left foot gaining distance sideways to right (1). Place the right foot flat on floor gaining distance sideways to right (2). Close the left foot to the right (3). Repeat three times. Change arms through first to third left and repeat the step moving sideways left. The ballonné is described in the Second Term notes to 2-4 rhythm. It is more easily learned to 2-4 rhythm because the downward beat of the step comes on count one.

COMBINATION OF STEPS AS SUGGESTION FOR A MAZURKA SERIES.

I.

Ballonné; pas de basque.
Four times (eight measures).

Ballonné (measure 1).

Stand with the right foot in fifth position front; arms in third position right. Raise right foot in preparation. Hop on left foot, gaining distance forward (1). Place right foot forward (2). Close right to left (3). Look up at right arm.

Basque (measure 2).

Step sideways right (1). Stamp left foot across in front (2). Step on right in place, raising left foot forward (3). Swing arms across body so left is out forward and right is sideways and down.

Repeat (measures 3-4).

The left foot is in front and raised on count three of the basque. Move forward diagonally to left with the ballonné, arms in third left. Do the basque sideways left in place.

Repeat right and left (measures 5-8).

If preferred instead of ballonné, basque to left on measures 7-8, do a walking turn in place to left on measure 7, and close with a stamp of right foot on measure 8; left arm raised and right hand on hip.

II.

Three ballonnés; one basque sideways or in circle right and left.
Twice (eight measures).

Stand with right foot in third or fifth position front and arms in third right. Move sideways right with three ballonnés and finish with one basque to right, swinging the arms across to right side.

Repeat to left side. This is a good step to move around in circle. Make one circle to right with the ballonnés. Take the basque in front facing front. Then move around to left in circle for the ballonnés left and finish with basque facing front.

III.

Bend-point—twice,
Brush the foot three times.
Bourrée changé (four measures).

Bend-point (measures 1-2).

Bending both knees, point the right foot close in fifth position back (1). Instantly point the right foot in second position, and stretch the knees (2-3). Left arm is raised high and right hand on hip. Repeat bend-point.

Brush the foot three times (measure 3).

Brush the right foot backward, forward, backward. The ball of the foot very lightly brushes the floor. The knee is the center of motion. The movement is very playful. It is characteristically Polish. Keep the left arm raised and watch the right foot.

Bourrée changé (measure 4).

Cross right foot behind (1). Step side left (2) and cross right foot in front (3).

Move the arms down sideways, into first position, and open into second position just as you finish the step.

Repeat all beginning with the left foot.

ARM MOVEMENTS. (port des bras).

I.

Stand with right foot in third position front and arms in second position. Move right arm to first position and out to second. In each movement the inside of the wrist leads; pushes inward to first position with palm downward; and pulls outward to second position. The shoulder is the center of motion. Bend very slightly sideways left from hips as right arm moves inward and rise to erect position as arm moves outward. Use two measures of music for each movement. Repeat with right arm measures 5-8. Same for left arm, measures 9-16.

II.

In same way move right arm up to fifth position and out to second. Repeat. Same for left arm.

III.

Arms to fourth position right; then to second; then to fourth position left and so on alternating fourth and second position. Make the movement free. Tip backwards slightly and look sideways over the lower bent elbow. Bring body to erect position and look forward when arms are in second position. Do this exercise four times, then repeat and point the opposite foot—when arms are in fourth right; point left foot in second position and look sideways left. Tip backwards very slightly at hips. Replace left foot in first position and arms to second position; body erect, facing front. Do this exercise four times. Close by dropping arms sideways.

A SIMPLE MAZURKA SERIES (No. 1).

I.

Two pas de basque forward.

Three step turn and point.

Four times (sixteen measures).

Two pas de basque (measures 1-2).

Move forward with two pas de basque, right and left; arms in fourth position right and left.

Three step turn and point (measures 3-4).

Take three steps gaining distance sideways right with each step, as follows—Step right and left, making a half turn to right so you are facing rear of room (1-2). Step on the right foot again, turning backward right and facing front of room (3). During the three counts the arms circle from second to first, up to fifth and open into fourth position right just as you point left foot sideways for the fourth measure (1-2-3).

Repeat (measures 5-8).

Begin with the left foot. Move forward with the basques and sideways left with the three step turn. Finish by pointing right foot in second position and arms to fourth left.

Repeat right and left (measures 9-16).

II.

Two mazurkas.

Three step turn and stamp.

Four times (sixteen measures).

Two mazurkas (measures 1-2).

Move sideways right with two mazurkas; left arm high over head, right hand on hip.

Three step turn and stamp (measures 3-4).

Make a turn in place to right by walking around three steps. Finish the turn by stamping once with the left foot, close in third position. Arms circle from second to first and up to fifth for the turn and finish with right arm up and left hand on hip as you stamp left foot. Hold as an attitude for one measure.

Repeat (measures 5-8).

Keep right arm raised, place left hand on hip. Repeat mazurkas to left side. Turn to left and stamp right foot as a finish, raising arms to fourth position left.

Repeat right and left (measures 9-16).

III.

Two pas de basque backward.

Three step turn and stamp.

Four times (sixteen measures).

Two pas de basque (measures 1-2).

Begin right; move backward with two basques, arms swing across to right and left.

Three step turn and stamp (measures 3-4).

Turn in place, to right with three steps and stamp as explained in step II, right arm up and left hand on hip for the pose.

Repeat left (measures 5-8).

Begin the backward basque with left foot. Turn left and close with stamp of right foot as you raise left arm high, right hand on hip.

Repeat right and left (measures 9-16).

IV.

Bend-point—twice.

Bourrée changé and point.

Four times (sixteen measures).

Bend-point (measures 1-2).

Bending both knees point the right foot close in fifth position back very quickly (1). Instantly point right foot in second position (2-3) and also stretch knees to stand tall. Repeat bend-point (1-2-3). Left arm in fifth position, right hand on hip. Look at foot.

Bourrée and point (measures 3-4).

Cross right foot behind (1); step side left (2); cross right foot front (3). Arms circle from second to first; again to second and finish with right arm raised to fifth and left hand on hip, just as you point left foot in second position and hold (1-2-3).

Repeat left (measures 5-8).

Repeat all beginning left foot; move across to right with the bourrée.

Repeat right and left (measures 9-16).

The whole of step IV must be full of playfulness.

V.

Repeat step II, moving diagonally forward right and left. Increase the tempo and carry the step up to a climax of speed and expression—triumph, victory. Hold the last attitude.

MAZURKA SERIES (No. 2).

I.

Two pas de basque.

Turn, stamp and brush.

Four times (sixteen measures).

Two pas de basque (measures 1-2).

Two pas de basque right and left, stamping on count 2, each time as you place the foot forward. Arms in fourth position right and left.

Turn (measure 3).

Step side right, swing left foot around in front and turn finishing with the weight on the left foot. If it is any easier, make this turn with two steps, left and right. Arms, as usual, for a turn, move up to fifth and open in second position.

Stamp and brush (measure 4).

Stamp the right foot and brush the left foot up from the floor in second position. Place the left hand on the hip, and raise the right arm high. Hold the position for count 3.

Repeat all of step I (measures 5-8).

Repeat right and left (measures 9-16).

This step can be taken sideways right and left, or moving forward with the pas de basque. The latter is better.

II.

Two mazurka steps.

One pas de basque.

Two stamps.

Four times (sixteen measures).

Two mazurka steps (measures 1-2).

Move sideways to right with two mazurka steps. Right hand on hip, left arm raised high.

One pas de basque (measure 3).

One basque to right; stamp the left foot, as you place it across in front. Arms in fourth position right.

Two stamps (measure 4).

Stamp right foot and left. Right arm raised high, left hand on hip.

Repeat all to left (measures 5-8).

Repeat right and left (measures 9-16).

If you move forward with the first step, move sideways right and left with the second step. If you move sideways with the first step, then go diagonally forward right and left with this step.

If preferred do two ballonnés instead of the mazurkas. It gives a larger and more dramatic effect. Have arms in third position in line of direction for the ballonné and swing arms across to right lateral position for the basque. Raise one arm high for stamps as explained.

III.

Three pas de basque.

Two stamps.

Twice (eight measures).

Three pas de basque (measures 1-2-3).

One pas de basque to right. Stamp count 2 as you place the left foot forward; and turn the body to the right so your left shoulder is toward the front of the room. Arms folded high. Look front over left shoulder. Repeat to left and right keeping arms folded.

Two stamps (measure 4).

Stamp the right foot and left. Raise the right arm high and place the left hand on the hip. The left shoulder is to the front. Hold the position for one count.

Repeat all (measures 5-8).

Arms folded high; repeat all, beginning the pas de basque with left foot. Finish with two stamps right, left, and left arm raised high.



FIG. XVI
Step III. Count 4.
Position of arms



FIG. XVII
Step III. Count 5.

IV.

Two backward ballonnés.
Two bourrées.
Twice (eight measures).

Two backward ballonnés (measures 1-2).

The left foot is in fifth position front. Hop on it with the right leg raised backward (1). Place the right foot backward (2). Draw the left foot to fifth position front (3). Repeat the ballonné on the left foot. Keep the arms folded high, and bend the body forward very slightly.

Two bourrées (measures 3-4).

Cross the right foot behind (1). Step left foot sideways (2); cross the right foot in front (3). Repeat the bourrée moving to right and finish with left foot in fifth position front. Keep arms folded during the bourrées.

Repeat all of IV (measures 5-8).



FIG. XVIII
Step IV. Count 1

V.

Repeat step I (sixteen measures).

NOTE: If the backward ballonné in step IV is too hard, use two mazurkas, one pas de basque and stamp (the second step). Move diagonally backward to the right with the two mazurkas. Turn to left in place with the basque and two stamps so you are ready to move diagonally backward, left, with the mazurka left.

If the students are equal to it, change the second step to one ballonné, one pas de basque. Do this three times and on measures 7 and 8 make

a walking turn in place, with three steps. Stamp the last step as a finish. Repeat the whole eight measures, beginning the first ballonné with the left foot. This brings the turn to left.

A COUPLE DANCE.

BY

R. C. GRANT.

Girl's part is described. Leader's part is the same except that he begins with left foot.

Part I (four measures).

Stand in open position, inside hands joined. Step side right (1); cross left foot back (2). Leap side right and bring left foot to fifth position front (3). Join two hands. Cross to partner's place with one polka-mazurka step turning to right, as follows: Slide right foot sideways making a quarter turn right (1). Close left foot to right (2). Step forward on right foot (3). Let go one hand so you are standing again in open position.

Repeat all, returning to own position with the polka-mazurka step and turning to right (measures 3-4).

Part II (four measures).

Waltz position. Move forward in line of direction turning to right. Girl begins with right foot. Two slides right and step on right foot (1-2-3). With the step on count 3 turn to right. Repeat beginning left foot and make the turn to right again on count 3 as you step on left foot. Two polka-mazurka steps, right and left and turning to right (measures 3-4).

Polka-mazurka. Slide right foot sideways (1); close left to right (2). Step or leap very lightly to right foot (3). Repeat left.

Repeat Parts I and II as often as desired.

FOLK DANCES.

1. Irish Jig.
2. Gathering Peascods.
3. Row Well, Ye Mariners.

Numbers 2 and 3 are described in *The Country Dance Book*, Part II and Part III, by Cecil Sharp, published by Novello.

MUSIC FOR THIRD TERM.

For exercises in pas de basque and mazurka use any of the well-known mazurkas by the great composers.

Coppelia Mazurka, Delibes.

Mazurka-Russe, Glinka.

Kuiawiak, Wieniawski.

For Mazurka Series No. I use *La Czarine*, by Louis Ganne, and for Series No. II use *La Tzigane*, by the same composer. For the couple dance use "One Heart, One Soul," by Johann Strauss.

THE DEMONSTRATION PLAY SCHOOL OF 1913.

CLARK W. HETHERINGTON, UNIVERSITY OF WISCONSIN.

2. SOCIAL PROGRESS AND THE SCHOOL ORGANIZATION.

While the play school is primarily a product of child-study, it is also demanded by the new educational conditions attendant upon social progress. No phenomenon of our civilization is more striking than the rise of modern industrialism, no force more potent in its influence on the home and child-life.

In the past, the home was the center of life and experience. The majority of homes were not only the centers of family life, but they were industrial and social centers, furnishing large opportunity for the child to see and participate in all the essential human activities. The factory took from the home both the industrial occupation and the machinery of manufacture, with all their stimulus and opportunity for child activity. Hence, the function and the size of the home have contracted and with the contraction the function of the home as a social center has declined. Entertainments are sought outside in commercial amusement centers, with a further contraction of educational stimulus in the home. Moreover, the size of the family has decreased, leaving children not only without generous opportunities for activity, but without even the stimulus of an adequate character-building companionship. In a word, modern industrialism has squeezed the educational juice out of the home.

And, if we are to believe social workers, the squeezing process will continue. Criticism that places on parents the blame for their failure to supply educational needs which the home supplied a generation ago, misses the mark. Speaking broadly, parents are helpless. Even the most earnest frequently find themselves at their wits' end in trying to meet the life needs of their children. The masses have neither training for the problem, educational resources in the home, nor the financial ability to meet the need at home or in private enterprises.

With the continued domination of industry over our social life, the home will probably be less and less able to fill the educational needs of the child and a greater gap between parental life and child life will develop. Adults must be specialists in order to be efficient and they must struggle for leisure in order to have any degree of completeness in life. Both these conditions and the habits of adult life flowing out of them are foreign to child nature and life. So, if the influence of industrialism continues, the gap between the child and adult is bound to widen. Like

all differentiations in the organic world, the greater the likeness the greater will be the interdependence. The child is dependent upon adult resources and organizing skill in order that he may have life; and the adult, who is to be the product of this child-life, is dependent upon the child's living his complete life. The failure to supply that complete life gives us adults who are mere cogs in the wheel of a complex machine. This is the social educational situation even now.

Instead of the home and its immediate environment supplying practically all the opportunities for the child's activities, experiences and expression, these functions are now divided among three institutions—the home, the school and the play-center.

The home is still the center of domestic life, though even in the best homes it is greatly narrowed in its educational possibilities. Many homes are merely places in which to sleep and eat. Though they still have great educational influence, their educational resources are practically nil.

The school has absorbed an increasing amount of the child's time, but it has not, except in a few cases and in a limited way, even attempted to supply what has been eliminated from child-life by modern social changes. As a prominent educator puts it: a generation ago, a boy had three months' schooling and nine months in which to get an education; now he has nine months' schooling and three months in which to gain an education. Actually, the situation is even worse; since during the three months he has few opportunities for activities that educate.

The public playground is coming to fill the need for educational activity and experience otherwise limited by a physical environment that is unnatural, and a social one that is complex and specialized. At present, most playgrounds are inefficient, because of public ignorance as to their functions and the prevalence of poorly trained directors.

The public playground is a child's community social center and it should supply and does now supply, under expert play directors, not only the space, equipment and companionship which are beyond the economic and social resources of the home, but the adult leadership that is essential.

Experience has shown that leadership is the first essential of a successful playground, for three groups of reasons:

1. The playground is a democratic institution open to all children; hence, unless directed, apt to be dominated by the bully or the tough gang. It concentrates the bad manners, antagonisms and vices of children; hence it is apt to be a breeding place for evil unless in charge of a director who is trained to convert these very tendencies into sources of moral discipline.

2. The playground brings together a large miscellaneous group of children of different ages, temperaments, social training and habits of play. This makes the play organization com-

plex beyond the democratic organizing power or self-control of children. The play breaks down without the superior skill and control of the adult leader who may, by bridging the difficulties of organization, make the playground the most efficient agency in existence for training in democratic citizenship.

3. The playground is an institutional center for child-life; a substitute for certain educational functions of the home, which the home can no longer perform adequately. The supervision formerly supplied by the parents in activities in which they were experts can no longer be supplied in the new activities. Few parents can be experts in child nature or the technique of a vast variety of activities that satisfy the progressive educational needs of children. This function must be taken over in its large and difficult phases by the professionally trained leader. His influence should radiate from his center of business into the surrounding community, the home and the school. Since the playground is a laboratory of conduct and its activities are the foundation for a modern democratic system of moral education, the director becomes the main influence for efficiency in this highest phase of education.

As the home approaches the apartment type and the family the one-child type, under the pressure of modern social conditions, the relative importance of the play-center and school increases.

In this social situation child welfare requires a new spirit and a new organization of the school and playground. Both are extra-home institutional centers of child-life and both exhibit the inefficiency of an incomplete organization.

As the playground is a center of life and education organized from the child's standpoint, and the school is a center of child experience and education organized from society's standpoint, the two institutions should be combined to unite the two points of view, and *unify* the child's educational experience. It is not sufficient that a playground space be added to the school or that a group of manual or other activities be added to the games of the playground. *The play-center and the school center must become one in spirit, aim and organization.*

A triangular division of child-life under three classes of institutions and the dual organization of extra-home activities are inefficient, not only educationally, but administratively. Experience has shown that children in cities will not or cannot go more than one-quarter or one-half mile to a play-center. Therefore, the provision of adequate playgrounds within reach of every city child, and the organization of a staff of leaders, under some municipal administrative body apart from the Board of Education, puts a double burden upon the taxpayers.

So far as the small town and country are concerned, few would suggest, after the recent campaign for a wider use of the

school plant, that a play-center should be located anywhere except at the school; still, where they have been so located, the functions of the play-center and the functions of the school have not been identified.

The public school is the institution concerned with the education of the child; it must provide all his extra-home educational activities if its functions are to be efficiently realized. As indicated before, this is a different problem from the recreation of the adult.

New Educational Movements and the Play School Idea.

Social progress has changed not only the relationships between the home and the play-center and the school, but it has brought a new social conscience concerning education. We are in a period of educational discontent, restlessness and experimentation—a part of the general social discontent. Every man who thinks and who is sensitive to the spirit of the time reacts upon the educational situation and usually has some “new” idea or variation of the educational program. Several new types of school and a generous number of new educational efforts, both without and within the public school system, have been organized and promoted sufficiently to attract public notice.

Of the new types of school one or two are significant. First, there is the vacation school, which is successful from the standpoint of child welfare and child interest. But it is simply a recognition of the fact that the child's education is going on three hundred and sixty-five days in the year and that the school must replace the home and community in supplying opportunity for experience.

Then there are the open-air schools, which have proved that our “model” ventilating schemes are delusions and that the most rational way to ventilate a school is to do away with most of the school walls. Now we are about to see the time-worn school idea run its vicious circle again. “Adequate provision” is to be made for children “needing” the fresh-air school. So (according to the program) masses of children will be kept indoors to be devitalized and subjected to a string of diseases with their train of adult weaknesses, while the tubercular and the anæmic will have the privilege (until they get well) of the only type of school any child ought to have.

Ayers says that the open-air school will take its place in the history of education as marking one long step toward that school system of the future in which the child will not have to be either feeble-minded or delinquent or truant or tubercular in order to enjoy the best and fullest sorts of educational opportunity. Even in the colder sections of the country and during the severest winters, children can be made comfortable in the open air most

of the day and for most of their activities. Until this common-sense standard is realized, school hygiene will progress with one leg paralyzed.

Significant for the future of the open-air school is the widespread rebellion among parents against putting their children in the public schools because they "will be shut indoors" or because they are "never well." Naturally, a large number of private outdoor schools are catering to this sentiment. Closely associated is the organization of country day schools, such as exist in Buffalo and Minneapolis, indicating that well-to-do parents are willing to pay high rates of tuition to have their boys go to the country each day.

Several new movements are strikingly significant of the trend in educational organization. Most of these are focused on the adolescent, yet the principles involved and their solution extend into the pre-adolescent period. Conspicuous among these movements is that of the Boy Scouts, with its highly elaborated program of activities and honors for achievements. This organization and that of the Camp Fire Girls are phases of the great movement for directed play and leisure time. They have arisen and attracted public attention because of the widespread feeling that masses of children are growing up incapable, resourceless and irresponsible. Hence the new devotion to a program for achievement as a means of character development.

The Junior Republic, boys' cities, civic activities and responsibilities for boys, all indicate the rising social consciousness that children have their own sense of values and responsibility. This sense is just beginning to be organized for educational purposes. Increasingly as the years progress, the imagination is stirred by the relationship between approaching adulthood and the adult's activities. Since the results depend upon leadership, we have a host of social problems rising out of our past neglect.

Some of the "new schools," however, in which "real work" is the central idea of the program, have failed to achieve their ideals because the programs are based on ignorance of child nature or on the old notions of play or "work" that is a mere imitation of specialized adult occupations. Where these efforts have succeeded, especially for the younger children, leaders have organized "play" instead of "work," without knowing it.

The gardening movement, geography excursions and the shift in nature study from that of plucked and dissected symbols to a study of nature in action—changing, growing, eating, reproducing, struggling nature with all its vital human relationships—all these activities emphasize the fact that "learning" must be a part of life and built on vitalizing, mind-filling experience.

The focal point of thought in these movements drifts toward the organization of the child's whole life-experience on a concrete laboratory basis. It involves a recognition of child capaci-

ties and needs previously furnished in natural contacts with a simple adult life now passed away.

Vocational training and guidance are receiving their emphasis. Adjustment for the masses is the aim, but vocational adjustment is only one phase of life—the adjustment of the adult. Avocational or recreational adjustment, social adjustment, citizenship adjustment and domestic adjustment are coördinate, and they all depend upon the developmental or educational adjustment during the years of growth. Obviously shallow is a vocational training and guidance that is not based on educational provisions that allow the child all his early years for enthusiastic living and achieving until the work mechanism is established and talents, interests or capacities are developed; and until expert leaders who are guiding this living process may discover individual tendencies and adaptabilities. Furthermore, a vocational training that is not based on organic, nervous, intellectual and moral development and that is not coördinated with a social and recreative adjustment and a preparation for citizenship and domestic life adjustment, is bound to produce workers that are but inflexible cogs in the wheel of a gigantic machine which will inhibit both individual and social progress.

The new efforts for backward and exceptional children reveal the recognition of the fact that our wonderful school mechanism has failed in results for great masses of children. The consciousness is growing that the universal "child" when differentiated into individuals is as variable as the number of children and that each must be educated in a variable and adaptable program. This is perfectly practical when activities rather than subjects of study are organized.

The campaign for school hygiene has become almost hysterical. Accumulating evidence has shown the physical, mental and moral effects of long hours, confinement and over-pressure in mental work. Nevertheless, there is a demand for a broader manual training, a larger nature-study, a fuller "physical education" and an efficient moral education—all interpreted as "subjects of study" and added to the old subjects; together with new phases of the arts, sciences and literature pushed by a variety of individuals from the viewpoint of their own adult specialized interests.

Consequently, school hygiene will come out of the same door wherein it entered, so far as its larger functions are concerned, unless child-life is put squarely on its two hygienic legs in school organization: the one, an open-air life; and the other, a program of activities instead of subjects of study.

Our educational fetish, the three R's, blocks the way. Certainly children must acquire the tools of a cultural adjustment; but is the learning to read and write and count at an early age more sacred than the health of our children and an enthusiasm

in life that gives capacity to live and work efficiently? At present, the danger is that the fetish will be imposed at five or even four years of age and some few children are able to learn to read and write during these tender years, for the edification of ambitious teachers and vain parents. The point is not what some children can do, nor that they should not learn these essentials of a cultural adjustment during childhood. It is that to make reading and writing a requirement to which all other activities are subordinated, say up to the child's ninth year, is insupportable from a broad educational standpoint.

The time has come when men are beginning to realize that the stifling of the child's developing enthusiasms in life through a back-warping, chest-cramping, nerve-breaking, mind-deadening desk and schoolroom program of "studies" is as cruel as the Spanish Inquisition.

The tendencies noted point to the solution. All the vital special desires in education can be met—the overcrowding eliminated, the program increased to eight, ten or twelve hours a day and through three hundred and sixty-five days in the year, the present injury to health replaced by a positive construction of vital and nervous powers of which health is an index, moral education placed squarely on a laboratory basis, with each child treated as an individual as well as a creature to be socialized, and the "learning" increased both in quantity and quality—by reinterpreting the school as an open-air, educationally fused play and social center; and by shifting the emphasis in the school program from subjects of study to the organization of activities which evolve with the aid of leadership into specialized, adult interests.

This solution, as indicated by the effect of recent social changes on educational practice, is also demanded by the social changes to come. Society has reached the age of Human Engineering, with child education as its foundation. The knowledge and skill are at hand. In the past, man's human engineering efforts were confined to correction and cure; medicine was the dominant human engineering science. In recent years we have learned how to prevent many individual and social ills. The sciences of prevention are now dominant and "hygiene" is in the air. But a new thought is already here—*constructive effort*. Social correction and medicine are still advancing, prevention is commanding public opinion, but both are more or less futile without a foundation of constructive engineering. And education is the core of all constructive engineering which deals with the individual.

Education is now the dominant science, the source of appeal in all social effort, as well as in the efficient adjustment of the individual. Of the three forces determining what any individual shall be at maturity—heredity, activity and environment—with

the three corresponding sciences—eugenics, education and social economy—activity alone is the source of power in the individual after birth. The environment sets conditions for activity, therefore influences result; but activity itself is the developer of all power and education the science of constructive effort with the individual. Old, neglected, despised Education has become the new inspiration in Human Engineering.

Even the universities feel the new responsibility of education, and schools of education are arising, still dominated by the old narrow ideas of education as an intellectual process, but destined to fulfill their real function: producing engineers of child-life and child adjustment to meet the requirements of an advancing civilization. This is the hope for democracy and civilization.

3. THE PLAY SCHOOL A REINTERPRETED SCHOOL.

The play school is proposed as the next step in the evolution of the elementary school. (1) It is suggested as the extra-home institutional center of child-life in which the school and the playground are educationally fused and their aims identified; and where the child's whole daily active life, not supervised by the parents, shall be spent, through the entire year from early infancy until the capacity to work consciously for adjustment has been established. (2) It is proposed as a center in which children shall learn to live and to work with enthusiasm, by living completely in their activities which include the whole physical and social environment and are organized to satisfy fully the child's hungers for experience and self-expression. (3) It is proposed as a center for complete leadership, where the interest is centered in the child, not in subjects of study.

The aims of the play school may be summarized as follows:

1. To organize the opportunity for a complete play-life in order that the child may develop his powers, learn the meaning of his environment and discover himself.

2. To furnish leadership for the fundamental activities in order that organic, nervous and volitional powers for activity with enthusiasm and the capacity for work may be established.

3. To connect the play tendencies and interests with materials for activity that will feed and develop stable interests; and then connect these interests with the resources of society, especially literature.

4. To secure close observation, clear thinking, skilled execution and free linguistic expression in connection with all activities.

5. To mold the instinctive and emotional reactions in all activities in order that sound moral habits, moral judgment and social ideals may be established and come to control all developing powers for complete adult adjustment.

(TO BE CONTINUED.)

**EXAMINATION OF THE SWIMMING POOL AT THE
NEW GYMNASIUM OF THE RENSSELAER
POLYTECHNIC INSTITUTE,
TROY, N. Y.**

(CONCLUDED.)

SCOTT W. MACKEY.

Bacterial Efficiency of the Filters.

Inasmuch as the total count of bacteria per cubic centimeter of the water in the tank was so high, a determination of the bacterial efficiency of the filters was undertaken.

The filters are provided with special cocks at different heights of the sandbed, to enable samples of this sort to be obtained. Half-litre samples were taken from above and from below the sandbed by means of these cocks, and sowings made from them into gelatine medium. From the total counts obtained in the above way, the efficiencies tabulated below were calculated.

TABLE No. 7.

Condition of filters	Percentage of removal			
	No. 1	No. 2	No. 3	No. 4
One hour after cleaning with city water,	99.6	99.5	99.2	99.4
Twelve hours after cleaning,	99.8	99.8	99.7	99.8
Twenty-four hours after cleaning,	98.6	99.1	98.8	98.9

The action of the filters as shown by these tests is satisfactory. It is of interest to note that the maximum efficiency seems to be reached when the bed has had time to become compacted after the washing, and to become covered again with a layer of the sticky hydroxide from the alum.

The Quantity of Alum Used.

The alum is fed to the water from the pool, before it enters the filters, by means of dashpots. The flow of water through these pots is regulated by needle valves and it is by adjusting these valves that the amount of alum entering the water is controlled. Obviously this dose is not a constant quantity and one of the chief reasons for its variation is the difference in the size of the pieces of alum with which the pots are filled.

Because of this the following method was used to determine the quantity of alum added.

Two barrels of alum were known to have been used during a period of about one hundred and fifty filtering days. From the daily records of the operation of the filters the average number of hours of filtration during this period was found to be eleven hours per day.

Therefore, 150 days at 11 hours and at 100 gal./min. equals $150 \times 11 \times 60 \times 100 = 9,900,000$ gallons.

And the alum used equals: 2 barrels at 400 lbs. = 800 lbs. = 5,600,000 grains.

Therefore, $56/99 = 0.56$ grains per gallon used.

This amount of alum is low, but owing to the lack of turbidity and color in the water and also to the fact that the water is filtered over and over again, it is plenty.

This quantity of alum was added by setting the indicators on the dashpot valves at three notches. By using ordinary care not to let the alkalinity of the water fall too low, there is little danger of getting any excess of alum into the pool with this setting.

The Use of Water.

Let us imagine that we have the swimming pool filled to the overflow gutters on some Monday morning. As soon as the first bather enters the tank, he displaces some of this water and it overflows into the drain. But the quantity of water which is lost by actual displacement is very small as compared with that which is lost by splashing. In fact, the first half dozen lively persons to enter the pool waste about three inches of water. After this three inches is lost the level of the water in the tank remains nearly the same, falling perhaps another inch during the remainder of the week.

This at once raises the question as to how often the water thus lost should be replaced. Inasmuch as one inch of water in this tank represents about fourteen hundred gallons, the initial splash comes to some forty-two hundred gallons. This means an expense of twenty-one cents, as the water is metered and paid for at the rate of five cents per thousand gallons. The question, therefore, reduces to one of cost. For this reason the practice has been to replace it only at intervals of one week or even longer.

Side Wall Scum.

As a result of the above economies in the use of water, the scum gutters lose one of their chief functions, namely the prevention of the deposits of dark colored scum on the walls of the tank just at the water level. This unsightly deposit detracts very greatly from the appearance of the pool, whose main appeal

lies in the spotless condition of its surroundings and the absolute clearness of its water.

The removal of this scum gave considerable difficulty; the only method which met with any success was to scrub it vigorously with a scouring material.

At a time when this deposit reached a quite considerable thickness, samples were obtained by scraping with a knife and an analytical examination of it was attempted.

A spectroscope analysis showed that calcium was present. The material was then tested with hydrochloric acid, to determine if calcium carbonate would be indicated by any effervescence. The effervescence, if any, was very slight, the material being of a waxy nature which was attacked by the acid only with difficulty.

Another sample was dried at 105° C., and after weighing was ignited in platinum for loss of organic matter. This amounted to 82 per cent.

From these tests we may conclude that the deposit is a calcium compound, probably organic, and of a soapy or waxy nature. It is, perhaps, formed from the body oils and perspiration, together with bits of miscellaneous material from the body and from other sources.

Contamination from B. Coli.

Inasmuch as we had made numerous tests for coli in the water of the tank, finding them in some cases but more often getting negative results, it was thought interesting to determine the presence or absence of these bacteria in some of the places noted below.

In making this investigation the following method was used. Small tufts of absorbent cotton were placed in separate glass covered petri dishes, and the lot of dishes then placed in a copper container. This cylinder and its contents were then sterilized in the Lautenschlaeger sterilizer for an hour and a half at 160° C.

The .1-c.c. pipettes used for the measurement of the water sowings were plugged with cotton near the end which is placed in the mouth, and then placed in suitable glass tubes containing a cotton plug in the open end, and sterilized at the same time.

In sampling, the tuft of sterilized cotton was swabbed over the place to be tested and then returned to the dish. When necessary, the cotton was moistened with sterile water before use.

The samples collected in this manner were taken at once to the laboratory. Here the cotton swab was rinsed in a small quantity of sterile water and one c.c. sowing of the water made into five Smith tubes of lactose bouillon.

These tubes were incubated at 32° C. The formation of gas, the presumptive test for coli, is noted in the following table:

TABLE NO. 8.

Place of Sampling	Formation of Gas after		
	24 hrs.	48 hrs.	72 hrs.
1. Well in filter room,	0/5	0/5	2/5
2. Floor near door, pool room,	0/5	0/5	0/5
3. Back of a person about to enter the tank after taking a shower,	1/5	1/5	1/5
4. Floor of steam room,	5/5	5/5	5/5
5. Stagnant pool by springboard,	5/5	5/5	5/5
6. General staircase,	5/5	5/5	5/5
7. Dirt from road near Gym,	5/5	5/5	5/5
8. Grass near same,	0/5	2/5	3/5
9. Leaf from tree near road,	0/5	1/5	1/5

From these tests we may conclude that although coli is of wide distribution, yet it is not necessarily present in many of the places usually supposed to abound with it. Furthermore, we must not expect that every bather entering the water will carry coli in on his body.

Hair in the Pool.

Very shortly after the pool was opened to the bathers there began to appear dark patches on the bottom. These gradually compacted themselves into fluffy rolls of considerable size, which moved slowly towards the deep end of the tank.

In order to determine to what cause the formation of these was due, some samples were obtained by diving and submitted to a microscopical examination.

MICROSCOPICAL EXAMINATION OF "HAIR" ROLLS.

No. 1.	Hair,	70 per cent
	Jute fiber,	25 per cent
	Miscellaneous lint,	5 per cent

These fibers were easily identified under a low power lense, and the percentage obtained by counting them.

The large amount of jute fiber present at once drew attention to the pusher used to remove these rolls. This pusher is a long-handled wooden frame, which was covered with coarse pieces of bagging. This loosely woven covering was badly frayed, and was quite evidently contributing considerably to the trouble. To remedy this a piece of carpet was substituted.

A second examination shows the effect of this change:

MICROSCOPICAL EXAMINATION OF "HAIR" ROLLS.

No. 1.	Hair,	85 per cent
	Jute and threads,	5 per cent
	Miscellaneous lint,	10 per cent

The accumulation of hair in such quantities seems quite remarkable, but the trouble is by no means confined to this pool. In places where the bathers wear clothing of any sort, this adds considerably to the total amount.

To remove this accumulation it is the practice to push as much of it as possible towards the bottom drain, and then by opening the valve in the filter room, to allow it to be drawn into the waste pipe. This method wastes about two or three inches of water every time it is resorted to.

In other places a long-handled rake is sometimes used.

Another method and one that seems to have much to recommend it, is by the use of an ejector. This ejector would work on the same principle as that used for a filter pump, and use the city water for its supply.

Bather's Hygiene.

In addition to the various precautions before mentioned there is another item which must not be overlooked. We have reference to the habits of the bathers, and to the care and intelligence with which they use the means at their disposal to keep the swimming pool in proper condition.

The soap cups furnish an example. When the pool was first opened for bathing, no soap cups were installed in the showers. Each man was expected to furnish and care for his own soap until such a time as they could be put in. This was a great inconvenience and the use of soap was found by close observation to be very perfunctory indeed. It was during this period that the first bacteriological examinations were made. It is our opinion that a considerable part of the responsibility for poor results at the time was due to this cause.

Upon the installation of the soap cups, however, the other extreme was encountered. The use of soap became so general that on some days an iridescent film was detected on the surface of the water in the tank. In one case a fellow was even found in the water of the pool, calmly shampooing his hair, and the water all around him was milky from his lavish use of soap.

The remedy of course lies in educating the bathers as to what is the proper behavior in a pool which must be shared by so many people. This is being done as rapidly as possible by means of floor talks to those men who come under the jurisdiction of the physical training department. The others must necessarily learn by example.

A point which must be strongly emphasized is the use of the scum gutter for purposes of expectoration; its function of hand-rail is entirely secondary.

Another item of interest is the use of cotton in the ears of bathers. The practice of thus protecting the ears from the

entrance of water is quite prevalent; as a result much of this cotton finds its way into the water, where it spreads out and forms a sort of slimy scum. This matter is more annoying than serious, but as there is a very simple and efficient rubber device on the market for the same purpose, the remedy seems obvious.

Critical Statements by Bathers.

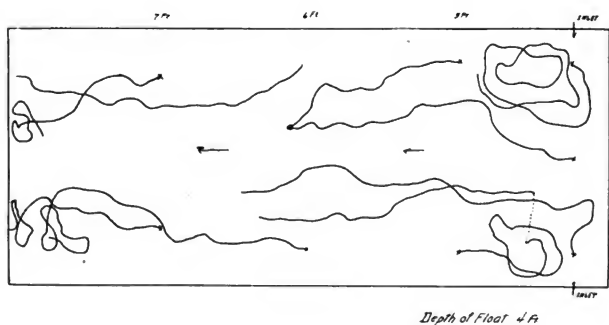
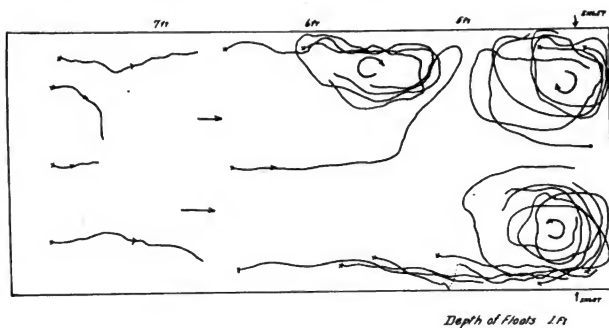
Before leaving the subject of bathers a word might be said as to the value of criticisms made by persons who use the swimming pool. Although it may at first seem strange, these comments are for the most part of little value. This is especially the case if the persons suspect that the water is being treated in some way or other. In connection with this we mention an example of Doctor Mason's, namely the city of Elmira. In this city the addition of alum to the water was detected by the consumers three days before it was actually put in. Somewhat similar trouble was experienced during these experiments, some mention of which is made under the subject of chlorine treatment of the water.

Circulation of the Water in the Swimming Pool.

During the course of these experiments the question was raised as to whether the water in the tank was properly circulated. As a result, an investigation was made to determine the actual course of the water, and to find out if there were any dead points where bacteria might gather. This item of free and complete circulation is important, since one of the chief safeguards against infection is the immediate dilution of any contamination which might find its way into the pool.

For the purpose of this investigation, floats were constructed of large corks, to each of which a 100 c.c. bottle was suspended by a fine cord. These bottles were provided with ground glass stoppers and by filling them to the proper amount, the cork floated high and free in the water. This prevented the surface currents having any appreciable effect on the course of the float.

Determinations were made at two different depths, and the courses of the floats are shown on the accompanying tracing, which was made from the original notes.



The circulation was satisfactory. Any tendency to stagnate in the whirlpools indicated on the charts would probably be cared for by the agitation caused by the bathers.

In one pool which has come to our notice, the water enters from below, at the deep end of the pool, and leaves by the overflow gutters. This seems to be a rather more effective way of securing a thorough circulation.

Physical Conditions of the Pool, etc.

From a physical standpoint the swimming pool and its accesso-

ries are well designed and operated. A few criticisms might be made, however.

The first is in regard to the drainage of the floor at the west end of the pool, and particularly of the urinal there. This urinal is so placed that a considerable part of the material for which it should care finds its way onto the floor and thence to a pool in front of the entrance to the room. It is almost impossible not to step in this on entering the room. Undoubtedly much of it is tracked into the water of the tank in this way.

We would suggest that this urinal be placed in the small lobby at the entrance to the room. This change could be made very easily and the plumbing connections now in place would serve.

Another point worth looking into is the adjustment of the showers. At the present time they vary, with no definite purpose, from one which gives a jerk of water almost unbearable in force, to another which has given no water for a month, at least.

We would suggest that the custodian of the gymnasium be given authority to maintain the proper adjustment of the showers, both as to the force of water and as to its range of temperature.

Lastly, in regard to the manner of going from the locker room to the swimming pool below.

At present the only way is by way of the main staircase, which necessitates sending out an alarm every time there are women visitors in the building.

Aside from this "aesthetic" objection, there are more serious reasons why some other means should be provided.

From the standpoint of the swimming pool itself, the twofold use of these stairs is objectional. Not only is much extra dirt tracked in, but on occasions when the side door has been open for a considerable time, the dust from the outside has been plainly noticed on the surface of the water.

It is also objectionable from the standpoint of the bathers, who are compelled to go through the open hall and to pass directly in front of the side door, opening to the outside air. In winter this exposure is not only a decided discomfort, but also a considerable danger. During the baseball season the members of the team have used this same staircase in going to and from their dressing room. The splinters which their spikes have raised in the wooded mat on the staircase have raised havoc with the bare feet of the bathers.

We would suggest that a staircase be constructed leading from the balcony of the swimming pool room to the level of the pool floor. This stairway could easily be constructed and would not necessitate cutting the marble floor slabs.

Bathers might then go directly from the locker room to the pool, without going through the outer halls.

As a result of the foregoing experiments the following conclusions have been reached:

Conclusions.

1. The swimming pool should be watched chemically and bacteriologically by a competent person. This watching should be supplemented by frequent floor talks to the men who come under the jurisdiction of the gymnasium authorities.

2. The system of refiltration, as against a fill and draw system, is a success.

3. The filters themselves normally act well, but without careful watching cannot be expected to give a complete guarantee of an entirely purified water.

4. The water should be dosed at suitable intervals to maintain the alkalinity at a normal figure. Unless this alkalinity be maintained, the filters are of little or no value, because of the alum not being decomposed. An alkalinity equivalent to twenty parts per million of calcium carbonate would meet all requirements. This can best be maintained by the addition of sodium carbonate in the proper amounts.

5. The water should be dosed at suitable intervals with bleach or with free chlorine in order to supplement the beneficial action of the filters.

6. The dose of bleach should be 0.33 p.p.m. of available chlorine. Should the water become turbid or colored at any time, this dose should be changed in view of the fact that a turbid or colored water needs more bleach to effect complete sterilization.

7. The dose of bleach should be added under water, to prevent detection by the bathers.

8. The dose should be added with care and controlled by the proper tests, as too great an amount would be detected by the bathers and complained of whether or not there was enough present to be objectionable from a sanitary standpoint.

We take this occasion to express our thanks to Prof. P. B. Samson for placing the gymnasium at our disposal for the purpose of these tests and for several helpful suggestions during the course of the examination. We also wish to thank Mr. Paige, custodian of the gymnasium, for his willing and intelligent cooperation, without which the difficulties of this investigation would have been increased very greatly indeed.

NEWS NOTES.

It is imperative that members should notify the secretary of change of address so that no REVIEWS may be lost in the mail.

AMERICAN PHYSICAL EDUCATION ASSOCIATION CONVENTION, JULY 21-24, BERKELEY, CAL.

Mr. E. B. DeGroot, chairman of program committee writes that a fine convention is to be expected. With the distance to California and the delay in the final arrangements, it is not possible in this issue to give a detailed account. The May REVIEW gave the program so far as it was completed to date. The following additions should be made to the Therapeutic Section:

4. Charles LeRoy Lowman, M. D., Los Angeles, Cal. "Clothing for School Girls. Its Relation to Health and Efficiency."

5. C. C. Crane, M. D., San Francisco, Cal. "Scoliosis."

The members have already received an attractive circular giving the itinerary for the trip from Chicago. The acceptances should go in promptly for this train. If any member has not received an itinerary through an oversight, he may secure one by writing to the office of the secretary.

CONVENTION DATES.

American Physical Education Association, July 21-24, Berkeley, Cal.

American School Hygiene Association, June 25-26, San Francisco, Cal.

National Education Association, August 16-26, Oakland, Cal. Physical education section, August 18.

SUMMER SCHOOLS OF PHYSICAL TRAINING.

Harvard Summer School, Cambridge, Mass.

Dartmouth Summer School, Hanover, N. H., July 6, for six weeks.

Chautauqua Summer School, Chautauqua, N. Y., July 5, for six weeks.

University of Wisconsin Summer School, Madison, Wis. June 21-July 30.

Southern Normal College Summer School, Hot Springs, N. C., June 15-August 12.

American College of Physical Education Summer School, Chicago, Ill., July 1-August 5.

Second Annual School for Athletic Coaches, University of Illinois, Urbana, Ill., June 21-30.

**CONGRESS OF PHYSICAL EDUCATION, N. E. A.
AUGUST 18, OAKLAND, CAL.**

GENERAL SUBJECT—PLAYGROUNDS.

9.00 A.M.

1. George E. Dickey, superintendent Recreation Department, city of Oakland, Cal. "Organization and Management of Playgrounds and Recreation Centers."
2. Edward B. DeGroot, director physical training, public schools, San Francisco, Cal. "The Next Steps in the Development of Public Playgrounds."
3. Harriet W. Thompson, department of physical education, University of Oregon, Eugene, Ore. Subject to be supplied.
4. Katharine M. Cook, assistant in rural education, Bureau of Education, Washington, D. C. "Playgrounds in connection with Rural Schools."

2.00 P.M.

1. Charles E. Teach, Orange Union High School, Orange, Cal. "Athletics and Playgrounds."
2. Charlotte Stewart, department of physical training, public schools, Salt Lake City, Utah. "The Place of Play in a Scheme of Physical Training."
3. Albert E. Winship, LL. D., member State Board of Education, Boston, Mass. "Physical Training Essential." Discussion led by Everett C. Beach.
4. M. D., director of physical education, public schools, Los Angeles, Cal.

8.00 P.M.

1. Richard G. Boone, professor of education, University of California, Berkeley, Cal. "The Educational Value of Playgrounds." Discussion led by F. H. Clark, superintendent of schools, Central City, Col.

PROGRAM OF THE EIGHTH CONGRESS OF THE AMERICAN SCHOOL HYGIENE ASSOCIATION, JUNE 25-26, 1915.

THE CIVIC AUDITORIUM, SAN FRANCISCO, CAL.

First Session, 9.30 a.m., June 25.

Address of the president, H. M. Bracken, M. D., secretary state board of health, St. Paul, Minn.

"Work of the Department of Hygiene in the College of the City of New York." Thomas A. Storey, director of hygiene, College of the City of New York, and secretary of the American School Hygiene Association.

"The Curve of Distribution of Activities in the Organization of a Curriculum." Clark W. Hethrington, professor of physical education, university of Wisconsin, Madison, Wis.

"The Relation of the Department of Pediatrics to the Academic Department in the University." W. P. Lucas, M. D., professor of pediatrics, University of California Medical School, Berkeley, Cal.

"A Health Examination at School Entrance." William H. Burnham, Ph. D., professor of pedagogy, Clark University, Worcester, Mass.

"The Education of the Child in Oral Hygiene." Guy S. Millberry, dean of the Dental College, University of California, Berkeley, Cal.

"Some Results of the Health Inspection of 400,000 Rural School Children in Pennsylvania." Samuel G. Dixon, commissioner of health, Harrisburg, Pa.

"Statistical Evidence of Physical Progress or Deterioration of School Children." Frederick L. Hoffman, statistician, The Prudential Insurance Company, Newark, N. J.

Second Session, 2 p.m., Friday, June 25.

"Some Lessons from the Open-Air School." Sherman C. Kingsley, director Elizabeth McCormick Memorial Fund, 315 Plymouth Court, Chicago, Ill.

"A State Program of Schoolhouse Hygiene." S. A. Callahan, commissioner of school buildings, state department of education, St. Paul, Minn.

"Cloth Window Open-Air Schools." John B. Todd, M. D., Syracuse, N. Y.

"The Unit Schoolhouse and its Lighting." R. W. Corwin, M. D., chief surgeon, The Colorado Fuel and Iron Company, Minnequa Hospital, Pueblo, Colo.

"A System of Sanitary School Inspection with Graded Standards and Exact Rating of School Buildings." Walter S. Cornell, M. D., director of medical inspection of schools, Philadelphia, Pa.

"Hygienic Needs of California Rural Schools." Margaret E. Shallenberger, Ph. D., commissioner of elementary schools for California, Sacramento, Cal.

"Some Lines of Progress in School Architecture." Charles S. Kaiser, architect, San Francisco, Cal.

"A Review of the Work of the Health and Development Department of the Los Angeles Schools." A. W. Moore, M. D., director of department of health and development, Los Angeles, Cal.

Third Session, 9.30 a.m., Saturday, June 26.

"The School and the Social Hygiene Movement." William F. Snow, M. D., secretary of the American Social Hygiene Association, New York.

"The Educational Basis for Sex Instruction." C. E. Rugh, professor of education, University of California, Berkeley, Cal.

"The Hygienic Value of Grading a School According to the Intelligence of the Pupils." H. H. Goddard, Ph. D., director of research, The Training School, Vineland, N. J.

"Some Results of a Study of Goitre Among School Children." D. C. Hall, M. D., professor of physical education and hygiene, University of Washington, Seattle, Wash.

"The Teacher's Part in the Control of Communicable Diseases of School Children." J. M. Force, M. D., assistant professor of epidemiology, University of California, Berkeley, Cal.

"Six Years of Health Inspection in Oakland, Cal." N. K. Foster, M. D., medical director of schools, Oakland, Cal.

"The Value of Competitive Games in the Physical Training of University Students." Herbert R. Stolz, assistant professor of hygiene, Stanford University, Cal.

"Normal Schools as Instruments of Public Health." Elizabeth W. Allison, M. D., medical director of state normal schools, Superior, Wis.

"School Hygiene and the Community." L. N. Mines, superintendent of schools, Crawfordsville, Ind.

Fourth Session, 2 p.m., Saturday, June 26.

"The Conservation of Vision." George H. Kress, M. D., dean of the Los Angeles Department of the University of California, College of Medicine, Los Angeles, Cal.

"Safeguarding the Eyesight of School Children." M. Luckiesh, M. D., The Nela Research Laboratory, Cleveland, Ohio. Paper to be read by Mr. L. R. Voyer, General Electric Co., San Francisco, Cal.

"The Relation of Home Economics to Child Welfare." Edna Rich, president, State Normal School of Manual Arts and Home Economics, Santa Barbara, Cal.

"The Height and Weight of School Children." Lee K. Frankel, M. D., sixth vice-president, Metropolitan Life Insurance Co., New York, N. Y.

"Significance and Prevention of Amebic Infections in Mouths of School Children." Anna Wessels Williams, M. D., division of laboratories, department of health, New York, N. Y.

"Some Lessons from Ten Years of Health and Development Work in a City School System." George L. Leslie, M. A., formerly director of health and development, Los Angeles, Cal.

"School Hygiene in Hawaii." J. S. B. Pratt, M. D., president territorial board of health, Honolulu, Hawaii.

Baroness Rose Posse has resigned from the active duties as president of the Posse Normal School and has sold her interests to Mr. Hartrig Nessin, formerly director of physical training, public schools of Brookline, Mass., and, since 1891, in charge of educational and medical gymnastics at Harvard Summer School. She will remain as president emeritus, and a member of the board of directors. She will also continue to edit the *Posse Gymnasium Journal*.

SOUTHERN NORMAL COLLEGE, HOT SPRINGS, N. C.

On April 1, W. W. Hastings, Ph. D., severed his connection with the Normal School of Physical Education in Battle Creek, to take the presidency of the Southern Normal College. They have a summer session in physical education and play and carry on a course for the training of physical directors.

The course in physical education is carried on in connection with a sanitarium and gives an opportunity for learning massage, hydrotherapy, dietetics, etc.

BOOK REVIEWS.

HEART DISEASE, BLOOD PRESSURE AND THE NAUHEIM TREATMENT. By *Louis Faugeres Bishop, A. M., M. D.* Published by *Funk & Wagnalls Co.*, 1914. 317 pp. Price \$3.

This volume has met with phenomenal success, as five editions have been called for in ten years, and since its publication no work has appeared to replace it. It is not intended for the heart specialist, but has been written for the *general practitioner* and supplies the information required in the management of heart disease and arteriosclerosis, besides describing accurately the Nauehm treatment. The many really serviceable illustrations are of great assistance. Doctor Bishop added a chapter on "The Construction and Use of Blood Pressure Instruments" in the last edition and in this, the fifth edition, the author has again carefully gone over the book and made changes and additions where necessary, including a full and complete index.

Chapter I discusses in one section the increase of arterial pressure due to exercise and the increased amount of blood in the arteries turned from the large veins in the abdomen during the exercise.

The Nauehm-Schott treatment of baths and exercise is discussed in five chapters of the text.

The discussion in chapter X on the blood vessel tone maintaining function of the brain in its relationship to the voluntary muscles will be of interest to physical educators.

SCHOOL HYGIENE. By *Robert A. Lyster, M. D.* Published by *Warwick & York, Inc.* 350 pp. Price \$1.15.

An important step in hygienic reform is the recent legislation which makes medical inspection compulsory in many school systems. There is room, therefore, for a book that will give teachers a sufficient training in hygiene to enable them to act as efficient assistants to the school medical officer. "School Hygiene" not only gives this, but also various important examinations in the subject. The author has been careful not to introduce an unnecessary proportion of theoretical information, and has in all cases explained his meaning in the simplest language available.

It is unfortunate that such a recent book does not give any recognition to the newer work on ventilation, humidity and carbon-dioxide content. In its discussions a book intended for teachers should give the recent information, at least in the country in which it is printed.

THE FEELINGS OF MAN. By *Nathan A. Harvey.* Published by *Warwick & York Inc.*, 1914. 276 pp. Price \$1.60.

This book attempts to bring to the interpretation of psychological phenomena the discoveries that have been made in physiology and neurology, in a more emphatic way than is usually undertaken. It is believed that no theory of feeling can be satisfactory which does not seek a physiological basis, and the imperfections in the various theories of this nature that have been advanced, as well as the truth that they contain, have been pointed out.

The standpoint from which the book is written is frankly mechanistic. The author does not hesitate to employ hypothetical reasoning, believing that hypothesis, if it is carefully considered and based upon a sufficient number of well-ascertained facts, is a most important method of investigation. The interpretation of feeling is based upon a physiological hy-

pothesis which the author regards as holding the same relation to psychology that the hypothesis of molecules and atoms and electrons does to chemistry, or the representation of forces by lines does to physics.

The book is likely to prove very attractive, not only to psychologists and others who are especially interested in the study of the feelings, but also to biologists, since it presents an appeal that is lacking in most of the books on psychological subjects.

THE AIMS AND METHODS OF NATURE STUDY. By *John Rennie*.

Published by *Warwick & York, Inc.*, Baltimore. 368 pp.

Price \$1.10.

The aim of this work is to equip teachers with first-hand knowledge of facts, principles and methods so as to render them self-reliant as regards the development of their work in this subject. It contains a full account of the organization of nature study throughout the school, typical courses of study for the different grades in the school, particulars of outdoor and indoor work, of town schools and country schools, of the school garden and the school aquarium. As to methods of teaching, the author regards it as specially necessary in nature study that general principles should be kept in view, while considerable latitude may be allowed in the matter of details. An important place is given to the keeping of pictorial calendars on which observations made by pupils out of doors should be recorded; weather records should also be kept, and in country districts, at any rate, the dates of commencement of agricultural operations.

The greater part of the book is taken up with outlines of model lessons dealing with typical studies. The book is illustrated by numerous original drawings and a large colored frontispiece, and is also provided with a glossary of Nature Study terms.

THE SOCIALIZED CONSCIENCE. By *Joseph H. Coffin*. Published

by *Warwick & York, Inc.*, 1913. 247 pp. Price \$1.25.

The particular merit of this new text-book in ethics consists in the fact that by approaching the subject from the social standpoint, morality is given a very rich and full content. After all is said and done, morality is one of the biggest and most significant facts of life, and Doctor Coffin has succeeded admirably in giving it concreteness and definiteness, and in making its claims real and vital. The author holds that the moral situation is always a social situation, and that moral conduct is the reaction of a self to a vital social problem. Accordingly, the two factors upon which ethical theory is based are selfhood, or personality; and the moral situations which arise in connection with the institutional life of society. The first three chapters of the book are devoted to the development of the moral criterion—the Socialized Conscience; this is approached by way of both psychology and sociology. The five succeeding chapters discuss, in the light of the moral criterion, the most significant of the moral problems which arise in connection with the great social institutions: namely, the home, the school, the vocation, the state, and the church. A final chapter gathers up the conclusions of both lines of enquiry and states them in the form of an ideal.

FROEBEL AS A PIONEER IN MODERN PSYCHOLOGY. By *E. R. Mur-*

ray. Published by *Warwick & York, Inc.* 224 pp. Price

\$1.25.

The purpose of this book is to show that Froebel's educational theories were based on psychological views of a type much more modern than is

at all generally understood. Most educationists have read "The Education of Man," but few outside the kindergarten world are likely to have bestowed much thought on Froebel's later writings. It is in these, however, that we see Froebel watching with earnest attention that earliest mental development which is now regarded as a distinct chapter in mental science, but which was then largely, if not entirely, ignored.

The major part of the book is intended to show the correctness of Froebel's views on points now regarded as of fundamental importance and generally recognized as modern theories. For this purpose passages from Froebel's writings are compared with similar passages from such undoubted authorities as Dr. James Ward, Professor Stout, Professor Lloyd Morgan, Mr. W. Macdougall, Mr. J. Irving King and others, revealing a solid amount of psychological discovery for which Froebel has had, as yet, but little credit.

SOCIALISM AND SYNDICALISM. By *Philip Snowden*. Published by *Warwick & York, Inc.* Frontispiece. 263 pp. Price 40 cents.

Mr. Philip Snowden is recognized as the spokesman of Socialists. His advocacy of his pet theory is as ardent as his criticism of Syndicalism is destructive. The book is cleverly written and most comprehensive, and will take rank as a standard text-book on Socialism.

THE FUNDAMENTALS OF PSYCHOLOGY. By *Benjamin Dumville*. Published by *Warwick & York, Inc.* 382 pp. Price \$1.40.

The object of this book is to provide a text-book of psychology suitable for the use of teachers; in other words, a book which, while giving a clear and adequate account of the nature and development of mental processes, shall do so throughout with reference to the actual work of the school. Thus it seeks to enable the teacher first to obtain a firm grasp of the fundamental facts of psychology and then to utilize his knowledge in the classroom.

Throughout the work the author has tried to avoid details which have little bearing on educational procedure and to give a clear sketch of the essential mental factors with which the teacher has to deal, and which he hopes to develop. It will never be possible to make the serious study of psychology easy. But it is possible so to present the matter that the painstaking student of average ability can obtain a clear insight into the mind of the child, can appreciate the nature of his task as a teacher, and can make his practice in school into an intelligent attempt at supplying the growing mind with the food which it is capable of assimilating.

CHILDREN'S PERCEPTIONS. By *W. A. Winch*. Published by *Warwick & York, Inc.*, 1914. 246 pp. Price \$1.50.

What do children observe and what do they not observe at different stages of their development? Mr. Winch made careful experimental studies in the public schools to find out. In this book, which bears the sub-title: *An Experimental Study of Observation in School Children*, the author not only gives his results, which are of importance for educational theory, but he also publishes a copy of the actual picture that he used for making his tests and supplies the reader with full accounts of just precisely what children of both sexes and of different years of maturity have done with the same picture.

Every reader will find it very much worth while to test his own capacity before he reads far into the book, and every teacher can repeat for himself with his own classes the work done by the author and can compare

results freely with these obtained by him. In the text of the book will be found not only the statistical tables necessary for this comparison, but also actual reports of children of both sexes and different ages and school grades. In short, the work is designed to encourage and facilitate the actual trial of the experiment by the reader, and should on this account be especially welcomed by teachers and others interested in experimental pedagogy.

THE PRINCIPLES OF EVOLUTION. By *Joseph McCabe*. Published by *Warwick & York, Inc.* 263 pp. Price 40 cents.

No subject has aroused more discussion or attracted more brilliant minds than that of Evolution. The author of this volume, Joseph McCabe, is one of the foremost authorities, and as a lecturer on this subject is known all over the English-speaking world. The book is described by the author as "a general and untechnical introduction," but it is more than that, for the author, besides giving a full and clear account of the principles of Evolution, sets forth the differences of opinion of evolutionists in a way that will enable an inexperienced reader to distinguish between what is settled and what is unsettled. To mention Darwin, Huxley, Russell Wallace, Haeckel, Spencer and Weismann is to visualize the battle of giant intellects over conflicting views on the universally admitted principle of Evolution.

EUGENICS: A SCIENCE AND AN IDEAL. By *Edgar Schuster*. Published by *Warwick & York, Inc.* 263 pp. Price 40 cents.

Doctor Schuster gives the keynote to his book on Eugenics in the introduction. He says: "There are some who would claim the ultimate goal of Eugenics is a patriotic one—namely to increase the commercial and fighting efficiency of the nation. We do not, however, intend to advocate it on these grounds, but would rather recommend it as a road to increased happiness for the human race." Doctor Schuster traces the discussion of Eugenics right back to the Greek poet Theognis, and quotes from Plato's "Republic," Aristotle's "Politics," and Campanella's seventeenth century book, "The City of the Sun." The labors of Francis Galton, the founder of the Laboratory for Eugenics, and the research work in America and the Continent, are fully dealt with. Mendel and his inquiry into the laws governing heredity are exhaustively explained by means of tables and striking illustrations from nature.

**PHYSICAL EDUCATION COMPLETE FOR SCHOOLS AND PLAY-
GROUNDS.** By *Lavinia H. Kaull*. Published by *Nevis Publishing Co.*, Sacramento, Cal., 1915. 272 pp. Price \$2.

The book aims to cover instruction in the organization and supervision of school playgrounds, with suggestions for building and cost of simple apparatus; gymnastics, with lessons for every grade; games and folk dances; suggestions to the story teller and a list of stories for elementary schools; also definite instructions in first aid to the injured and the physical care of children in the schoolroom and on the playground. The author has brought together a great deal of practical material that should be very helpful and suggestive to teachers of physical education.

MANUAL OF PLAY. By *William Byron Forbush*. Published by *G. W. Jacobs & Co.*, 1914. 353 pp. Price \$1.50.

The section of the introduction quoted below gives a good idea of the general treatise and plan of the book. It is distinct from the books that cover team games. The book aims to indicate what may be done in free play.

"Play is of two classes, plays and games. By games we mean organized play with definite rules; by plays we mean free play. Games are formal. Plays are informal. Free play is the earliest and throughout childhood the most important kind of play. Excellent treatises on play exist, but they are illustrated chiefly from the realm of games. There seems to be room for a handbook that will show mothers and teachers how to use and stimulate the love which children and young people have for imaginative and constructive plays, without precedents and unhampered by rules.

"This manual begins with some practical suggestions as to fitting up the home playroom and the home yard and gymnasium. It then discusses the principal things with which children play. It offers a schedule of the plays which seem to be most interesting at the different ages. Then comes a very practical part of the book which describes various fascinating ways in which children may freely play by themselves.

"The author hopes, through this manual, to lead to a revival of the play spirit in the hearts of parents, to a greater thoughtfulness in the presentation and use of toys, and to a richer home life."

THE SOCIAL EMERGENCY STUDIES IN SEX HYGIENE AND MORALS.

By *W. T. Foster*. Published by *Houghton Mifflin Co.*, 1914.

224 pp. Price \$1.35.

Dr. C. W. Eliot in the introduction of the book says: "This book is a sincere effort, first, to supply the needed knowledge of terrible wrongs and destruction; and secondly, to indicate cautiously and tentatively the most available means of attacking the evils described. It is an attempt to enlighten public opinion on one of the gravest, with the exception of the warfare between capital and labor. The book is not intended for children, or even for adolescents, but rather for parents, teachers and ministers who have to answer the questions of children and youth about sex relations, or deal sympathetically with the victims of sexual vice.

"This book is intended to arouse public sentiment, spread accurate knowledge, check rash enthusiasm, and promote well-informed and resolute action." This indicates the general character of the book. President Foster, of Reed College, has made a real contribution to the subject in bringing together these addresses by various authors.

HYGIENE FOR GIRLS. By *Florence Harvey Richards, M. D.*

Published by *D. C. Heath & Co.* 12mo. pp. 257. Price 70 cents.

Doctor Richards is eminently well qualified to prepare such a text. She has had experience as a city physician, has had supervision of the health of over two thousand high school girls, and writes in a thoroughly scholarly manner.

Her general plan is to give to girls of high school age the groundwork in the principles of hygiene, and she aims to give not a mass of information concerning the anatomy of the body, but rather to place emphasis upon the laws of health as they are based upon physiological facts.

Throughout the entire text the attempt is made successfully to relate to everyday life the common sense and fundamental principles of rational living. The text is elementary but has an unusually well-selected and arranged group of facts and laws.—*G. B. A.*

PIONEERS OF MODERN PHYSICAL TRAINING. By *Fred E. Leonard, M. D.* Published by *Association Press*, 1915. 16mo.

159 pp. Price \$1.

The first edition of this book was a reprint of articles which appeared in *Physical Training* during 1909 and 1910. This edition contains addi-

tional sketches of Amoros, Ling (Hjalmar), Brosius and Betz. An index and appendix which were published in 1912 is also included within the covers of the present edition, thereby rendering it of much greater value. This compilation may be regarded as a thoroughly authentic though brief treatment of the times, work and influence of the leaders included, and will be found especially useful for classes in normal and summer schools.—G. B. A.

FOR THE HONOR OF THE SCHOOL. By *Ralph Henry Barbour*.
Published by *Grossett & Dunlap*. pp. 253. Price 50 cents.

THE BOY SCOUTS OF BLACK EAGLE PATROL. By *Leslie W. Quirk*.
Published by *Little, Brown & Co.* pp. 308. Price \$1.

These two new books by well-known authors have met with a deserved success among boys. They will be found to be especially useful to the boy scout library and for rainy days in the summer camps.

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FOR

THE AMERICAN PHYSICAL EDUCATION ASSOCIATION

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AMERICAN PHYSICAL EDUCATION REVIEW

JAMES HUFF MCCURDY, M. D., *Editor*

Vol. XX. No. 7

OCTOBER, 1915

Whole No. 116

A COURSE OF STUDY IN DANCING FOR HIGH SCHOOL GIRLS.

WORK FOR FOURTH TERM.

CARRIE VAN R. ASHCROFT, NEW YORK CITY.

KNEE BENDINGS (PLIÉS).

Stand with feet in first position, and arms in second position. Count eight four times. Bend knees deeply, raising heels slightly (1); stretch knees, rising to erect position (2). Repeat (3-4). Point the right foot in second position (5). Place it in second position (6). Bend and stretch knees twice in second position (7-8—1-2). Point the right foot in second, and draw it to third position front (3-4). Bend and stretch knees twice in third position (5-6-7-8). Point the right foot in fourth position front, and place it in fourth front (1-2). Bend and stretch knees twice in fourth position (3-4-5-6). Point the right foot in fourth position, and draw it to the fifth position front (7-8). Bend and stretch knees twice in fifth position (1-2-3-4). Point the right foot in second position (5-6). Draw to first position, and drop arms (7-8).

In all ballet training the knee bendings (pliés) occupy an important place. They usually open the exercises at the bar, and also the floor exercises. They are used as described above, and then repeated with the left foot. Use any vigorous polka or schottische.

CHANGEMENTS DE PIEDS.

Changements de pieds is a jumping exercise. The position of the feet are changed while jumping.

Stand with the right foot in third position front, the arms hanging easily at the sides of the body. Bend the knees slightly; jump from both feet, and land with the left foot in third position front, and knees bent (1). Stretch knees coming to erect position (2). Repeat and land with the right foot in third position front (3-4). Continue for 16 counts, landing with the right and left foot in front alternately.

The same exercise can be taken to one count instead of two for each changement. This is the customary way of executing the changement. In this quick tempo do 16 changements. Use polka or schottische.

Four changements; four leaps.

Do four changements in quick time. Then leap from foot to foot four times, bringing the free foot up close in fifth position back with each leap. Make the leap quite high. During the changement keep the feet close together, toes pointed downward, knees straight.

WALTZ STEP AS A FLOOR EXERCISE.

Stand with right foot in third position front. Step forward on right foot (1). Slide left forward and beyond right (2). Close right foot to third position back and immediately raise (cut) left forward (3). This is one waltz step forward right. Step backward on left (1). Slide right foot backward, passing beyond left (2). Close left to third position front and immediately raise (cut) right backward (3). This is one waltz step backward left. Repeat forward right and backward left. Then change to forward left and backward right.

STEPS IN DEVELOPING THE WALTZ AS A SOCIAL DANCE.

A complete method of developing the waltz as a social dance is outside the purpose of this article but the following order of exercises is submitted as one method that has proved successful for class instruction.

I.

Stand in open order, in files, as for class instruction. One waltz step forward and one backward.

II.

Two waltz steps forward and two backward.

III.

Four waltz steps forward and four backward.

IV.

Begin with right foot, do two waltz steps making one complete turn to right and gaining distance forward. Begin immediately with right foot, do two waltz steps making one complete turn to left and gaining distance backward.

V.

Begin right foot and do four waltz steps making two complete turns to right and gaining distance forward. Begin immediately with right foot, do four waltz steps making two complete turns to left and gaining distance backward. Exercises I-V are done in open position on the gymnasium floor just as the class stands for the regular floor lesson.

VI.

Stand in circle, facing center. One waltz step forward right and backward left. Then two waltz steps turning to right and gaining distance around to right. Repeat all several times.

VII.

In same way do the left turn. One waltz step forward left and backward right. Then two waltz steps turning to left and moving around the circle to left.

VIII.

Stand in circle with left hand toward center ready to move forward in single file around the room. Two waltz steps making one complete turn to right so you face forward again. Then one waltz step forward right without turning. Then two waltz steps turning left and gaining distance forward around the circle. And so on—two steps turning and one without turning. This alternates the right and left turn.

IX.

Stand in circle with left hand toward center in single file ready to move backward around the room. Begin left, do two waltz steps making one complete turn to right and gaining distance around the circle. Then one waltz step backward left, without turning. Then begin right foot, do two waltz steps, making one complete turn to left and gaining distance backward around the circle. Then one waltz step backward right without turning and so on alternating the right and left turn. Two steps turning, one without turning and always gaining distance backward.

X.

Put VIII and IX together dancing in couples. The leader does exercise IX and her partner the counterpart which is VIII.

XI.

Stand in couples. Leader begins left foot. Four waltz steps making two complete turns to right and gaining distance in line of direction. Then one step backward left without turning. Then begin with right foot and do two waltz steps making one complete turn to left. Then one waltz step backward right without turning. This makes eight measures of music. The leader is ready to begin again with the left foot and repeat all of the above.

GLISSADE.

A glissade consists of two movements, first, sliding one foot from a closed to an open position and second bringing up the other foot, finishing in a closed position. Glissades are made to the side and forward or backward.

EXERCISES IN THE GLISSADE.

I.

Stand with the right foot in fifth position back. Slide the right foot to second position and draw the left foot to fifth position front. The glissade should move "up-down," thus; as you slide the foot sideways, rise on balls of feet (1-2); as you bring the feet together sink heels (3). This gives the soft, legato style to the glissade. Repeat the glissade twice sideways to right, drawing the left foot to fifth position front each time (three measures, waltz). For the fourth measure point the right foot sideways and draw it to fifth position front. You are now ready to move sideways left, beginning with the left foot which is in fifth position back. Do three glissades to left. Point left foot in second and draw it to fifth position front. Repeat the exercise to right and left.

II.

Stand with the right foot in fifth position front. Do three glissades moving sideways right, drawing the left foot to fifth position back. Then point the right foot sideways and draw it to fifth position back for the fourth measure. Repeat to left. In these exercises no arm work is necessary. Strive to get the characteristic up-down movement of the glissade and have it very smooth.

III.

Three glissades and one bourrée.

Stand with the right foot in fifth position back, right arm in first position and left out sideways in second (lateral position). Do three glissades, moving sideways to right. Draw the left foot to fifth position front; back; front. Bend very slightly sideways right to look down at right foot. For the fourth measure do one bourrée, cross right foot back; step side left and cross right foot front. Make the bourrée in the same quiet soft style as the glissade. Change the arms across with the bourrée and stand up tall. Repeat moving to left side and repeat to right and left.

IV.

Two glissades and turn.

Stand with the right foot in the fifth position back; arms in third position right. Look up at right hand. Do two glissades sideways right, drawing the left foot to the fifth position front and back. Arms in the third position right. Look up at the right hand. Step sideways right, and open the arms to the second position. Swing the left foot around in front, and turn. Arms through first, up to fifth, and out into the second position. Finish with the right foot in the fifth position front. Repeat sideways left beginning with the left foot.

EXERCISES IN THE PAS DE BASQUE.

All of the pas de basque combinations used in the third term to mazurka rhythm should be practiced to waltz rhythm. The following may be added as a more difficult exercise and may also be used as a combination in a waltz series.

One pas de basque to right.
Step left and turn.
One pas de basque to left.
Step right and turn.
Four pas de basque backward.
(Eight measures.)

COMBINATIONS OF STEPS AS SUGGESTIONS FOR A WALTZ SERIES.

I.

Step-hop forward right, left, right.
Slide-hop forward left.
Four pas de basque backward.
(Eight measures.)

Step-hop forward (measures 1-2-3).

Step forward on the right foot and hop on it, extending the left forward. Arms in fourth position right. Repeat left forward and change arms to fourth position left. Repeat right. The step-hop to waltz rhythm must be very smooth. Always use two counts for the step, and hop on count three. It is a common fault to hop on count two, making the step jerky and not in the true waltz rhythm.

Slide-hop (measure 4).

Slide-hop diagonally forward left, into the arabesque position. Left arm forward and up; right arm down and back. Right leg raised backward with *knee straight*.

Four pas de basque (measures 5-8).

The right foot is free. Begin right and move backward with four pas de basque. Make them very large. Sway arms across body to right and left at chest level. Keep head erect, and turn head to look forward over the bent elbow, that is, left and right alternately.

II.

Step-hop forward right.
Slide-hop forward left.
Two pas de basque backward.
(Four measures.)

Step-hop (measure 1).

Step forward on the right foot and hop on it, extending the left forward. Arms in fourth position right.

Slide-hop (measure 2).

Slide-hop diagonally forward left. Arms through first and into the arabesque position left.

Two pas de basque (measures 3-4).

Begin right foot and move backward with two pas de basque. Sway arms across to right and left.

III.

Two ballonnés to right.
Step right and turn.
(Four measures.)

Two ballonnés (measures 1-2).

Move sideways right with two ballonnés; arms in third right.

Step and turn (measures 3-4).

Step sideways right, arms in second. Use one measure of music for this step. Swing left foot around in front and turn. Arms as usual. Move *swiftly* to first position, then more slowly up to fifth and out to second position, just as you complete the turn.

IV.

Two pas de basque forward.
Bourrée changé to left.
Step left and turn.
(Four measures.)

Two pas de basque (measures 1-2).

Begin right foot; move forward with two pas de basque right and left; arms in fourth position right and left.

Bourrée changé (measure 3).

The right foot is in front and raised forward with the last count of the pas de-basque to left. Circle right foot around to rear and cross it behind for count 1 of the bourrée. Step sideways left (2), and across in front on right foot (3). Arms as usual circle from second to first and out to second position.

Step and turn (measure 4).

Step sideways left and turn; arms up to fifth and open in second position.

V.

Bourrée arabesque right and left.
 Tour jeté to rear.
 Pas de basque backward right and left.
 (Eight measures.)

Bourrée arabesque (measures 1-4).

Run diagonally forward right, three small steps, right, left, right, hopping on the third step into the arabesque position right (two measures). Repeat to left corner (two measures).

Tour jeté (measures 5-6).

The right leg is raised backward. Move to the rear with three small running steps, making a half turn to the right. You are facing directly to rear with the third step (right), (one measure). Brush the left foot from the floor up into the fourth position. Leap on to it making a half turn to right so you finish facing front just as you land. Carry the right leg around backward with a straight knee. Circle the arms up into the fifth position for the leap, and finish with the arms in the second position and right leg raised backward as you face front.

Note.

The bourrée and leap to the rear is called "Jeté en tournant" by the French and "Tour jeté" by others. It is a leaping turn. You turn and leap. As a rule it will be called "Tour jeté" in these articles, because the term is briefer. The "Tour jeté" is sometimes done, moving sideways left or right, but as a rule it is done to rear.

Pas de basque backward (measures 7-8).

Pas de basque backward to right and left. Sway arms across the body to right and left.

PORT DES BRAS.

I.

Stand with the feet in first position and arms in second position. Move the arms to first position (measure 1). Open the arms to second position, palms up, and at same time point right foot diagonally forward and bend at hips so you look down over the foot (measure 2). Move the arms through first and up to fifth position as you lift the body and step diagonally forward on the right foot with a waltz balance step (measure 3). Step diagonally backward left with a waltz balance step and open the arms to second position (measure 4). Repeat all beginning left foot and balance forward on left foot.

II.

Stand with the feet in first and arms in second position. Move the arms to first position (measure 1) and out to second (measure 2). As you open them to second position, point the right foot backward and at same time face the body around a quarter turn to right. Turn head so you look forward over left shoulder; left arm is directly forward; right arm backward; palms up. Bend backward very slightly at hips. Hold

this position for the second measure of music. Make a backward bourrée turn to right, thus, step right, left, right. Make the steps very small and make one complete turn so you finish facing front (measure 3). Just as you begin the turn, carry right arm up and left arm to first position so your arms are in fourth position right. During the turn the right arm moves down slowly to first and as you finish open the arms to second position and bring left foot to right so your feet are in first position (measure 4). You are now ready to repeat left. Arms to first position (measure 1). Open them to second as you point left foot back and turn body to face left. Turn head to look forward over right shoulder (measure 2). Bourrée turn backward left, with arms in fourth position left, and slowly change arms to first and then open into second as you face front and bring feet together. Measure 3 of music for the turn and close foot to first position for the fourth measure.

PLASTIC EXERCISES.

A "plastic exercise" is a body bending exercise, combined with a port des bras. Three exercises are arranged into a series, just as combinations of steps would be arranged into a dance.

I.

Point the right foot sideways, and bend sideways right at hips, to look down at foot. Gesture of location with right hand, low over foot. Left hand out sideways left; both palms down (1-2). Slide right foot across in front of left, gradually lifting body to very erect position; weight well forward on right foot (3-4). Left foot simply points backward. Arms move from the position sideways into a low first position, up to fifth position, and out into third position left. Chest is lifted very high, look up into left hand. Hold the position. Repeat on left side (5-6-7-8), and repeat right (1-8) and left (1-8).



FIG. XIX
Exercise I, Count 3-4

II.

At close of Exercise I, weight is forward on left foot, and arms are in the third position right. Step directly backward on right foot, carry body low by bending both knees; circle arms down low towards the body; move them to rear, upward, and forward until they are in third position left, and weight is well forward on left foot. Chest lifted as high as possible. Look up into left hand (1-2-3-4). The arm movement is large and continuous, something like an Indian club circle of both arms to right. Pause as you finish forward. Step on right foot in place, swing left foot around to rear and step on it, making body face to left. Arms circle as described above, down low when body is low, and up into the third position right as body lifts, and weight sways forward to the front foot (5-6-7-8). In the same manner step on the left foot in place, swing the body around to face right side, as you step backward on right foot. Circle arms and finish with weight forward on left foot and arms in third left (1-2-3-4). Once more step on right foot in place, and swing around to face left side, as you step back on left with weight and finish forward right. Close left foot to the fifth position back, and drop arms (5-6-7-8).



FIG. XX
Exercise II
Circling Arms Backward Left.
Weight is Back on Left Foot
—1.



FIG. XXI
Exercise II
Bringing Body to Erect Position
After Sweeping Arms Down Low
and Towards Body. Weight is
on Rear Foot Left.

III.

Point right foot in second position, and slide it forward to the fourth position crossed; arms in third left as explained in Number I. Open the arms to second position. Bend both knees as if making a deep courtesy. Then sway weight to rear foot. Circle arms down to first position. Stretch knees and rise. Hold weight back on left foot, and then sway weight forward to right, and slowly open arms into second position. Repeat beginning left foot.

IV.

Exactly like No. II, but raise the rear foot backwards just as you finish the exercise each time. Hold the pose. It is an arabesque position.

V.

Repeat Exercise III to close.

WALTZ SERIES.

I (A).

Four pas de basque forward.
Step-draw; step-throw to right.
Step-draw, step and turn left.
(Eight measures.)

Four basques (measures 1-4).

Begin right foot, do four pas de basque forward. Arms in fourth position right and left alternately.

Step-draw; step-throw (measures 5-6).

Step sideways right and draw left to third front; arms in second position. Step sideways right again and throw left foot forward as you rise on ball of right foot, arms in fourth position right.

Step-draw and turn (measures 7-8).

Step sideways left and draw right foot to third position front; arms in second position. Step sideways left again and turn to left. Arms up to fifth and open to second position.

I (B).

Four pas de basque backward.
Step-draw; step-throw.
Step-draw; step and turn.
(Eight measures.)

Four basques (measures 1-4).

Begin left foot and move backward with four pas de basque; arms sway across chest to left and right. Movement very free and large.

Step-draw; step-throw (measures 5-6).

As in (A), but move to left.

Step-draw and turn (measures 7-8).

As in (A) but move to right. Repeat I (A) and (B) (sixteen measures).

II.

Step-hop on right foot.
Slide-hop on left, facing right corner.
Bourrée turn backward.
(Four measures.)

Step-hop and slide-hop (measures 1-2).

Step sideways on right foot and throw left across front. Move the arms upward from a low first position until they are opposite the chest. Slide diagonally forward on left foot facing toward front right corner of room. Left arm forward; right down and back; right leg raised backward with straight knee. (A crossed arabesque.)



FIG. XXII. A CROSSED ARABESQUE

Bourrée turn backward (measures 3-4).

The right leg is raised backward in preparation. Make a complete turn to right, with three steps, thus—step backward on right foot and face to rear. Step on left foot making another quarter turn to right. Finish the turn by stepping well forward on right as you face front. Arms sweep sideways down, then to first, up to fifth and open to third left, as you step forward on right foot. Hold this position for measure 4.

Repeat (measures 5-8).

Begin left foot and repeat all of II to left. Step-hop on left. Slide right foot across so you face left corner. Make the bourrée turn backward to left. Finish with arms in third position right as you step forward on left foot.

III.

Two ballonnés; step and turn.
Repeat to left.
(Eight measures.)

Two ballonnés and turn (measures 1-2).

Move sideways right with two ballonnés, very large and free and in quick time. Arms in third position right. Step sideways right, arms in second. Swing left foot around in front of right and turn. Arms to first, up to fifth and open to second just as you finish the turn. Use two measures of music for the turn.

Repeat to left (measures 5-8).

Repeat all of II and III (sixteen measures).

IV.

Slide-hop forward right.
Step-back left and hop.
Bourrée changé.
Two glissades, step and turn.
(Eight measures.)

Slide-hop forward (measure 1).

Slide diagonally forward on right foot and hop on it into the arabesque position. Right arm forward, left down and back; left leg raised backward.

Step-back and hop (measure 2).

Step back on left foot and rise softly. Bend right arm across chest; right foot raised forward about six inches from floor. Look down at right foot.

Bourrée changé (measures 3-4).

Cross right foot behind (1); step sideways left (2); cross right foot in front (3) and pause with weight on right foot for one measure. Arms in second position for the bourrée and up into third position left with the pause.

Two glissades (measures 5-6).

Step sideways left and draw right foot to fifth position back; step left again and draw right to fifth position front. Keep arms in third position left. Look up at left hand.

Step and turn (measures 7-8).

Step sideways left; swing right foot around in front and turn. Arms as usual for the turn up to fifth and open into second position.

Repeat left (measures 9-16).

As you begin the forward slide on the left foot, bend the knee to carry the body quite low. Then rise into a high arabesque by stretching the knee and rising very high on the ball of the left foot. Repeat all of IV right and left (sixteen measures).

V.

Two pas de basque forward.

Step and turn right.

Repeat all left.

Two pas de basque backward.

Step back and turn right.

Repeat backward left and turn left.

(Sixteen measures.)

Repeat all of V (sixteen measures).

A COUPLE DANCE.

BY

R. C. GRANT.

Gypsy Waltz.

I (eight measures).

Couples stand facing forward, inside hand joined. Begin outside foot. Waltz balance sideways right. Step side right (1). Place left foot in fifth position front; rise on balls and sink heels (2-3). Repeat waltz balance sideways left. Let go hands, move forward in line of direction with two waltz steps turning to right. With the first waltz step partners are back to back and with the second waltz step they are facing. The man turns to left with his steps. Join inside hands and repeat all.

II (four measures).

Waltz forward in line of direction two waltz steps without turning. Begin outside foot; right for girl. Let go hands, making a half turn inward towards partner, and join inside hands to waltz backwards in line of direction. The turn is made just as you begin the third waltz step with right foot. Waltz backwards two steps, inside foot, outside foot, that is, right; left for girl.

III (four measures).

Waltz position; four waltz steps moving in line of direction and turning to right. Repeat from beginning as often as desired.

FOLK DANCE.

Highland Fling.

MUSIC.

1. Valse Lente from Coppelia, Leo Delibes. Published by G. Schirmer.
 2. Valse Brillante, in A Flat, Op. I, E. R. Kroege. Published by Kunkel Bros., St. Louis.
 3. First Violin, M. S. Witt. Published by Jos. Stern, New York.
- No. 3 is good for the Waltz Series. Use melodies one, two and three (32 measures each) and repeat melody one.
4. Schubert Waltzes, Peters Edition No. 150. Published by C. F. Peters, Leipzig, Germany.
 5. Il Bacio, Arditi. Published by Ditson, New York.
 6. Valse in E, Op. 34, No. 1, Moskowsky. Published by Ditson, New York.

No. 6 is very good for port des bras.

THE BLOOD PRESSURE IN THE LEG IN VARIOUS POSITIONS; THE BRACHIAL PRESSURE AFTER SHORT MAXIMAL EXERCISES; AND THE NORMAL PRESSURE IN PHYSICALLY TRAINED INDIVIDUALS.

GEORGE VAN NESS DEARBORN, CAMBRIDGE, MASS.

(CONCLUDED)

K. The last of the series of feats ("stunts") set for study was *walking on the hands* on the parallel bars or on the gymnasium floor. More subjects (all men), namely twelve, took part in this than in any other feat, and three of them repeated once each.

As Table K shows in ten of these fifteen tests there was an initial lowering of the pressure in the brachial artery, in one case, F. B. B., to 30 mm. of mercury. All of the measurements, as has been stated, were made when the subjects were seated in a chair with the right arm resting in the lap. The posture of the arm, then, while the pressure was measured, was reversed from that during this feat of hand-balance. Despite the considerable muscular tonus, the arms during the "stunt" become gravitationally congested to some extent, and the blood tends to rush out when the subject sits and reverses his arm. It seems likely, from the above figures, however, that this process was more than a passive hydraulic movement of the blood, and that it was in part at least a vasomotor reaction of an active kind and considerable in degree. This indicated especially by the individual variations, which would be less conspicuous were the process purely a matter of hydraulics. Subject J. H. K., for example, with a preliminary pressure higher than the average, showed no outrush of blood from the arm, if indeed the pressure be any criterion of this, but on the contrary a marked pressure-rise in the course of 45 sec. to 170 mm.; so also A. R. It is too early in our science of vasomotion to expect to explain such differences, but it is something to know that they exist. Meanwhile it is one of numerous facts that combine to demonstrate how extremely complex the problem is. It suggests in particular in this connection that just such a vasomotor reflex as we see exhibited here in the arm, must be in action for the vessels of the brain as a means of the avoidance of deranging cerebral anemia on occasion. Could we learn the direct and reciprocal relations between blood quantity and blood pressure in a part, a number of things (e.g., the nutritional conditions of the brain in relation to the musculature, etc.) would be on the way to explanation.

K. WALKING ON HANDS.

Subject and His Feet	Age	Sex	Time Intervals: Seconds	Heart Rate		Pressure	
				Before	After	Before	After
J. G. B. 44 secs.	29	M.	25 20 25 20	60	81 60 52 50 47	128	120 134 130 128 120 120
F. C. B. Three and one-half lengths of the parallel bars in 35 secs.	23	M.	25 120	105		108	125 123
F. C. B. (Another day) 30 secs. on the bars	23	M.	15 10 10 60 120	100	120 102 96 90	108	93 103 110 108 108
F. B. B. One and one-quarter lengths of the parallel bars in 40 secs.	24	M.	25 45 15 30 120 60 120			114	30 96 93 97 100 106 107
H. D. B. Four lengths of the parallel bars in 60 secs.	28	M.	20 120 180 300	(72)		120	102 120 126 120
H. D. B. (Another day) 45 secs. in hand balance	28	M.	15 10 10	72	100 80 80	120	110 111 112 114
I. E. B. 25 secs. (on the floor)	22	M.	15 15 50 60		144 120 100	122	110 140 144 133
G. W. F. 45 secs. in hand balance. "Cold"	29	M.	15 10 10 10 10	72	102 92	118	150 150 134 134 128

K. WALKING ON HANDS (Continued).

Subject and His Feat	Age	Sex	Time Intervals: Seconds	Heart Rate		Pressure	
				Before	After	Before	After
J. H. K. 20 secs. in hand balance	26	M.	15 15 15 15 15 15 15	68	92	138	164 166 170 154 154 148
G. A. L. 45 secs. standing on hands, foot against a post	32	M.	15 15 15 15 30 30 120 60 180 60	61	68 62 60 63	118	96 100 104 106 110 112 108 110 98 112
A. R. 45 secs. walking about in hand balance	26	M.	20 60 30 90	70	120 78 66	109	133 140 140 121
E. M. S. 40 secs. in hand balance	25	M.	25	90	100	108	105
M. H. T. 6 secs. in hand balance	23	M.	20 20 20 90 180 300	77	90 80 F 76	108	60 70 68 100 85 89 92 98 102
D. V. W. 60 secs. in hand balance	21	M.	During 20 10	54	56	98	120 104 101
D. V. W. (Another day)	21	M.	20 10 10 10 10 10 10 10 10 10 10	64	96 80	122	110 120 130 134 136 138 132 132 130 129 126 124

L. Three subjects' pressure, etc., were measured after various miscellaneous exercises, stated in the table below; these seem worth reporting.

Subject D. P. C., a clever, sweet little girl of eleven years, daughter of a Western physical educator, was the most interesting of the subjects, perhaps, in this last group, although her blood-pressure record has nothing especially unlike that of the other athletically trained people who partook in the research. Her normal pressure (subject No. 20) and that of a girl companion of the like age (subject No. 105) are given in the first table of the third part of this report (page 418) as 105 and 103 respectively. Both girls were athletic and more active than the average, but this one, D. P. C., was the stronger, more skilled and more self-reliant, a clever dancer, an adept at tumbling and altogether an amateur child athlete as far as possible from the highly specialized product seen sometimes on the stage, and one most pleasant to have about the busy university gymnasium.

L. MISCELLANEOUS GYMNASIUM WORK.

Subject and His Feat	Age	Sex	Time Intervals: Seconds	Heart Rate		Pressure	
				Before	After	Before	After
D. P. C. Tumbling for 10 mins., then seven "cartwheels," then a run upstairs	11	F.	20 20			(103)	120 114
R. E. I. Fencing 30 min., then 2-lb. dumbbell work (hard) 30 mins.	25	M.	30 20	(71)	90	135	148 146
D. V. W. Tumbling 30 mins., then 10 mins. rest, then athletic dancing for 30 mins.	21	M.	180 60	(58)	108 86	100	125

The abbreviated summary M of the percentages of the effects produced by these active exercises relates only, it must be noted, to the immediate effects,—the maximal amounts of the first tendency, whether upward or downward. Later rhythmic maxima are not summarized.

M. PRESSURE-MILLIMETERS OF MAXIMAL EFFECTS.

Feat	Subject	+	-	Feat	Subject	+	-	
A. Athletic Dancing	O. L. H.	33	17	H. Rope Climbing	F. C. B.	8	15	
	E. M. S.	10			F. C. B.	20		
	M. E. T.	44			H. D. B.	44		
	D. V. W.				I. E. B.	20		
B. Back-Flexions	F. C. B.	18	0		G. W. P.	30		
	E. C. H.	0			F. D. H.	30		
C. Broad Jumps	F. C. B.	27	32	I. Side-Hangs	H. D. B.	2	36	
	F. B. B.				H. N.			
	H. D. B.	8		J. Squats	F. B. B.	22	31	
D. Hand and Head Springs	F. C. B.		8		D. V. W.	31		
	F. B. B.		K. Walking on Hands	J. G. B.		8		
	H. D. B.	26		F. C. B.	17			
	I. E. B.	41		F. C. B.				
D. V. W.		P. B. B.						
E. Snap-Ups	W. F.			14			H. D. B.	
				H. D. B.				
F. Press-Ups	F. C. B.			16			I. E. B.	
	H. D. B.						G. W. P.	32
	D. V. W.	20					J. H. K.	32
G. Pull-Ups	J. B.	23		7			G. A. L.	22
	F. C. B.	13					A. R.	24
	H. D. B.						E. M. S.	
	W. F.	24					M. H. T.	3
	F. D. H.	30					D. V. W.	22
							D. V. W.	12
L. Miscellaneous	D. P. C.	17						
	R. E. I.	13						
	D. V. W.	25						

One sees that in the fifty-three separate tests thirty-one showed an increased pressure after the feat, twenty-one a decreased pressure, and one had no change. Subject F. C. B. did three of the "stunts" twice each: in two the results were opposite within the pairs and in the third pair both gave a decrease. In another subject, H. D. B., walking on the hands, gave a decrease both times of the pair, and in another subject, D. V. W., the results were opposite.

Rope climbing showed the largest percentage of rises in pressure, and pull-ups (a similar exercise) the next largest, unless we except side-hangs and squats, as is proper because only two subjects each were tested. The feats involving reversal of the standing posture, i.e., walking on the hands and hand and head springs, gave the least consistent results, and in this inconsistency lies one of the interesting problems which these experiments, simple though they be, present. Obviously, most blood-pressure records would be invalidated had more measurements been made.

In other words, the whole matter is far more complex than the average physician, for example, imagines. Most clinical measurements are *too few and perhaps more exact than the variable vasomotor conditions warrant*.

The individual differences in these results are apparently not ascribable to variations in the training of the individuals. While, therefore, we may in general admit the validity of the valuable results of Pachon,* these short maximal feats seem to produce pressure perturbations that are outside the relations of training—for they occur in finely trained men and women. Possibly relational differences in the autonomic nervous system will have to be suggested as the determinants of these vasomotor differences—when we know more than now about the sympathetic.

I wish here to express my cordial thanks to Daniel Chase, A. B., of Hamilton College, for much valuable help, mental and mechanical, in this section of the work. Also to the "subjects," busy men and women and little girls, who often at much personal inconvenience did cheerfully what I asked them to do in both this part of the research and in the first.

III. THE NORMAL BLOOD PRESSURE OF ATHLETIC SUMMER-SCHOOL STUDENTS.

There follow two tables of blood-pressure statistics from people not at the time immediately under the influence of muscular exertion of any kind. The former table summarizes the conditions in 112 students and instructors of the physical education department of the Harvard Summer School, in part already studied; and the latter table reports the rates and pressures of 147 of the current year "Freshmen" (young women) of the Sargent Normal School for Physical Education, also in Cambridge.

As has been already stated, the greater part of the subjects in the former table were instructors in physical education and are therefore classified as physically well-trained if not athletic individuals. There being at least as many real athletes as there were those relatively little trained, the athletic balance of this group is maintained and at a high level of neuro-muscular efficiency. The group of young women whose blood pressures appear in the second table are all untrained on this basis, the inadequate gymnasium work of a college or high school, a private school, or a Young Women's Christian Association, usually an hour or two a week at the most, representing their usual maximum of systematic training. All of these people, and especially those

* V. Pachon: C. R. R. Soc. de Biol., LXVIII. 18.

of the former group, are unusually "normal," healthy individuals, and are adequate to constitute a set of norms. With the three exceptions noted in the first table (one a case of arterial sclerosis who had already had, several years ago, a cerebral hemorrhage; one a mitral incompetency who refused to stop her work; and the third a man who had been fasting, save for a small amount of orange juice, for twelve days), these subjects were in supernormal condition. Undiscovered nephritis would be the greatest source of possible error, but its incidence cannot be predicted or allowed for in either group. They all were in better health and in considerably better vigor than is usual even in persons of their age and intelligence; and, moreover, they were, for the time being at least, living lives physically ideal for a large city so far as exercise, bathing, diet, oxygen, sleep, etc., are concerned.

The average age of the 112 young men and women of Table N was 28.1 years, the 44 males averaging 32.7 and the others 25.2 years. The combined average brachial blood pressure was 117.2 mm. of mercury; of the 44 males, 120.3 mm.; and of the 68 females, 114.1 mm. The sexual age-difference of 7.5 years corresponds to a blood pressure among all the variants within these average limits; the sex probably counts for more than the age and adequate vigor, qualitative and quantitative, more than either. For this vigor the majority of persons, in these physically degenerate days, depends on what is usually termed training.

The average age of the 147 young normal school women ("untrained") Table O was 19.8 years. Their average blood pressure was practically 108 mm. of mercury.

The age-difference of 5.4 years between these girls and the 68 females of the other table seems probably inadequate to account for the 6.2 mm. difference in the two average brachial blood pressures, especially at this early adult age. As we have seen, the pressures of the two eleven-year-old girls ("trained") were 105 and 103, while that of a fourteen-year-old girl ("untrained") was 103. Altogether comparison of the two tables corroborates an impression which has been developing in the observer's subconscious mind for some time, that physical training tends to *raise* the blood pressure to a normal standard of hemal efficiency. This seems to occur despite the progressive lowering in the heart-rate shown by McCurdy, Cook, Pembrey, Todd, Meylan, etc., to come from adequate systematic training. Indeed, it may be one of the chief means by which the essential vigorous voluntary control of the body exerts its beneficent influence on the entire individual.

SUMMARY.

1. The posterior-tibial blood pressure when the leg is horizontal is about 118 per cent of the "sitting" brachial pressure;

N. NORMAL BRACHIAL BLOOD PRESSURES (TRAINED).

Subject	Age	Sex	Heart Rate	Brachial Pressure	Subject	Age	Sex	Heart Rate	Brachial Pressure	Subject	Age	Sex	Heart Rate	Brachial Pressure
1	23	F.	61	105	29	35	M.	90	131	72	58	M.	66	124
2	32	F.	68	119	30	23	M.	74	125	73	(61)	F.	74	175
3	29	M.	60	120				84	124	74	31	F.	88	117
4	27	M.	69	132	31	29	M.	72	118	75	23	F.	—	127
5	24	F.	84	110				103	114	76	34	M.	56	118
6	23	M.	108	107	32	17	F.	84	118	77	21	F.	—	141
			105	108	33	26	F.	84	105				—	143
			96	124	34	24	F.	68	112	78	23	F.	72	135
			108	122	35	44	F.	110	127	79	23	F.	66	104
			92	126	36	26	F.	86	106	80	26	M.	70	109
			100	108	37	27	F.	80	104	81	42	M.	—	100
			97	120	38	24	F.	—	110	82	67	M.	60	153
			100	118	39	23	M.	84	130	83	27	F.	—	105
7	24	F.	—	118	40	32	F.	72	123	84	25	M.	80	115
8	21	F.	76	100	41	22	F.	—	110				90	108
9	24	M.	—	112	42	52	M.	68	135				101	110
			—	114	43	19	F.	72	112				96	108
			80	112	44	25	F.	96	130	85	63	M.	78	117
			78	112	45	27	M.	90	124				79	124
10	28	M.	—	120	46	18	F.	90	109	86	26	F.	—	115
			—	112				—	103	87	39	M.	72	121
			74	120	47	25	M.	71	135	88	22	F.	72	110
			76	126	48	24	F.	72	115	89	22	F.	76	95
			—	128				81	130	90	24	F.	—	108
			72	129	49	(25)	M.	—	105	91	47	M.	(51)	134
11	22	F.	—	120	50	34	F.	—	115				51	147
12	22	M.	76	110	51	31	F.	85	121	92	23	F.	74	125
			—	132	52	32	F.	—	117	93	26	F.	120	115
			90	132	53	24	M.	72	103	94	19	F.	—	117
			88	125	54	23	M.	84	126				—	110
			72	128	55	26	M.	68	138	95	22	F.	66	104
13	21	F.	72	100	56	60	M.	80	165	96	23	F.	88	105
14	23	F.	—	150				—	145	97	24	M.	61	113
15	24	F.	—	115	57	32	M.	61	118	98	21	F.	—	93
16	39	M.	60	121	58	20	F.	92	115	99	25	F.	—	104
17	30	F.	—	105	59	38	M.	72	117	100	19	F.	82	109
18	28	F.	88	118	60	25	F.	—	97	101	31	F.	78	112
19	24	M.	84	126	61	22	F.	72	97	102	23	M.	77	108
20	11	F.	—	105				78	100	103	27	F.	72	99
			—	105	62	30	F.	80	107	104	23	F.	—	125
21	39	M.	—	111	63	26	F.	68	117	105	11	F.	70	103
22	20	F.	100	135	64	31	M.	84	117	106	26	F.	—	97
			105	125	65	29	M.	—	121	107	21	M.	54	98
23	24	F.	82	114				—	115				56	100
24	44	M.	75	117	66	21	M.	76	110				—	111
25	34	M.	64	105	67	38	M.	77	117				64	122
			—	111	68	30	F.	80	154				64	120
26	23	F.	78	117	69	23	M.	86	129	108	26	F.	72	105
			105					—	128	109	(28)	M.	—	135
27	26	F.	66	100	70	32	F.	—	123	110	24	M.	78	115
			61	101	71	22	F.	—	90	111	32	M.	—	120
28	40	F.	—	116				—	100	112	26	F.	—	120
Averages										28.1				117.2

when the leg is in the usual standing position, about 133 per cent.; and when the leg is held vertically upward, about 70 per cent or frequently much less.

These numbers seem to corroborate the supposition of a pumping mechanism in the muscle-masses of the thigh.

2. Strenuous gymnastic feats are most often followed by

raised brachial blood pressure, in 58 per cent of the cases here reviewed, less often by lowered pressure, 39 per cent, while seldom is there no change or slight.

The reactions are so various and uncertain as to imply (especially as the results of overturning exercises) vasomotor reactions far too complex to be as yet explained.

O. NORMAL BRACHIAL BLOOD PRESSURES (UNTRAINED).

Subject	Age	Heart Rate		Pressure	Subject	Age	Heart Rate		Pressure	Subject	Age	Heart Rate		Pressure	Subject	Age	Heart Rate		Pressure	
		Before	After				Before	After				Before	After				Before	After		
1	22	72	70	111	38	21	74	76	102	75	19	100	88	100	112	18	92	96	93	
2	20	84	92	100	39	19	100	104	124	76	18	88	84	115	113	20	58	72	113	
3	19	84	72	97	40	19	80	80	119	77	20	60	72	87	114	19	96	96	105	
4	19	—	97	119	41	20	72	78	108	78	22	80	81	104	115	18	120	128	114	
5	20	88	88	124	42	20	116	108	115	79	18	80	88	119	116	19	72	76	100	
6	19	80	83	107	43	19	74	80	100	80	19	100	104	118	117	23	80	—	101	
7	19	89	100	130	44	19	88	92	109	81	21	100	96	103	118	20	84	88	107	
8	20	72	79	123	45	19	89	96	105	82	24	85	84	107	119	20	108	—	110	
9	18	96	100	100	46	20	89	96	117	83	18	68	76	110	120	18	82	78	114	
10	21	—	76	104	47	23	92	88	119	84	18	60	68	107	121	19	76	72	111	
11	18	—	64	112	48	18	68	64	94	85	19	88	80	100	122	19	86	78	106	
12	20	88	92	109	49	19	76	—	92	86	25	72	72	108	123	19	104	100	95	
13	20	98	92	103	50	21	88	82	98	87	22	80	92	98	124	19	104	88	122	
14	25	90	88	102	51	21	78	72	104	88	26	116	112	114	125	22	120	128	142	
15	17	76	88	106	52	27	73	73	113	89	20	108	80	114	126	19	88	100	106	
16	22	76	80	105	53	18	60	78	97	90	20	88	92	107	127	19	72	72	97	
17	20	84	94	94	54	18	94	100	101	91	22	76	80	92	128	22	73	—	101	
18	23	96	96	109	55	19	92	100	125	92	19	60	76	108	129	20	84	104	114	
19	19	90	82	121	56	21	82	88	99	93	18	92	94	94	130	20	81	81	135	
20	19	74	66	109	57	20	76	80	106	94	24	—	104	107	131	22	90	92	104	
21	19	69	69	118	58	19	96	81	103	95	19	72	90	88	132	24	112	100	118	
22	19	58	78	139	59	21	80	88	129	96	19	100	85	105	133	21	76	76	113	
23	17	88	88	122	60	22	72	104	100	97	20	100	92	118	134	20	83	88	113	
24	24	112	—	115	61	18	84	96	109	98	20	120	104	103	135	19	84	84	112	
25	21	96	—	105	62	19	84	96	127	99	21	82	74	94	136	19	80	84	110	
26	19	83	92	125	63	19	98	—	96	100	17	100	104	107	137	20	96	96	107	
27	20	88	84	100	64	19	92	76	83	101	21	—	112	110	138	20	96	92	103	
28	20	84	78	124	65	24	86	95	111	102	20	108	101	112	139	19	86	92	115	
29	18	80	84	100	66	18	—	90	114	103	19	120	108	105	140	19	80	78	101	
30	14	72	72	103	67	18	73	80	106	104	19	76	92	124	141	20	92	96	103	
31	18	100	92	94	68	20	72	73	92	105	24	80	—	112	142	18	72	72	105	
32	19	80	80	103	69	19	88	—	111	106	19	88	—	105	143	20	74	76	99	
33	17	96	96	109	70	20	72	80	99	107	19	80	84	103	144	19	80	80	122	
34	21	76	82	105	71	17	92	88	110	108	21	86	88	114	145	19	128	124	100	
35	20	104	104	95	72	20	102	100	110	109	18	80	—	105	146	19	84	80	96	
36	19	88	—	100	73	20	96	82	101	110	19	100	108	123	147	19	78	81	102	
37	18	96	88	115	74	18	68	74	110	111	18	72	92	110	Avs., 19.8					108

There is a distinct tendency in some cases to a variable but rhythmic rise and fall after severe short exercises, the heights of the waves occurring from 30 to 180 seconds apart most often, and representing variations of from 10 to 30 mm. in pressure. The clinical necessity of repeated measurement follows as a corollary of this condition, especially after mental or bodily excitement.

3. Forty-four trained males, with an average age of 32.7 years, had an average brachial pressure of 120.3 mm., while 68 trained females, with an average age of 25.2, had 114.1 mm. No

higher standard of "normality" than these subjects represent can be found.

One hundred forty-seven untrained young women, with an average age of 19.8 years, had an average pressure of 107.9 mm.

In these two sets of numbers there is evidence that adequate physical training raises the blood pressure to a definite maximum of efficiency, which, however, is not high.

It is possible, however, that age has a part in this difference. As a very rough rule (with almost as many exceptions as corroborations perhaps) from the age of ten, the following twenty years each is represented by one millimeter rise of brachial pressure above one hundred.

4. Blood-pressure variability from minute to minute is a reliable and simple index of subconscious emotional stress and of neural instability such as that, for example, of nervous fatigue.

APPENDIX. JANUARY, 1915. PRELIMINARY SUMMARY REPORT.

For nearly a year the writer has been engaged at times upon blood-pressure observations on all sorts of humanity and finds of special interest, to himself at least, in a fairly constant percentage of persons a *well-defined and extensive rhythm* in the brachial resistance, referred to above. The waves average around ten minutes in length and range in altitude from the usual variability of a few millimeters up to twenty or even more. It would seem that it might prove a matter of practical importance in the routine clinical measurements of blood pressure, usually heretofore taken about once or twice within a minute or two. The writer is now engaged in attempting to learn the precise relation of this rhythm to the emotional phenomena of wholly normal persons and to the affects of the neurasthenic, the hysteric and the alienated.

Altogether, it is obvious that the blood-pressure fad is being grossly overdone by numerous physicians, but "overdone" only because the mental and physical determinants of blood pressure are so numerous, so subtle, and so complex, that no one as yet understands how to interpret the measurements, although few as yet realize this fact.

AN ENGLISH GIRL'S ATHLETIC CAREER.

MARGARET RAWLINGS, READING, ENGLAND.

It is with pleasure that I take this opportunity to give you a glimpse of an English girl's physical activities throughout her school, college and after college days. The school which I shall so constantly refer to is typical of our large Friends' co-educational boarding schools. In nearly all cases these schools are situated in the midst of beautiful country, which means a freer, simpler and more natural life than the average child has in these days. In these schools the physical education of the child receives just as much attention as any other part of the school curriculum, and from the time the normal child enters boarding school at the age of ten, until the time she leaves at about the age of seventeen or eighteen years, she is putting forth every bit of energy and enthusiasm to reach the highest point in all her physical activities. Although I am speaking with the experience of co-educational institutions, I am speaking only of the girl's point of view; because to judge from a glance through the *American Review* it would seem that girls in America have no athletic career whatever! And so it is with especial interest that I tell a little of the tremendous enthusiasm with which English girls and women "go in for" physical training in exactly the same way as boys and men.

In America there seems to be much discussion as to the advisability of competition in athletics for girls. There is much to be said for both sides, but, personally, I cannot imagine athletics without the competitive side; probably because I believe in England we take it as a matter of course, for we have combined it with athletics for so many years. Really I think we play for the sport, and of course if we win, all the better! I suppose we all agree that physical training can do more for development of character than anything else. To start with, the most important thing is to get the right idea of competition into the child's mind, if it is not naturally there. In the widest sense of the word competition is only a means to an end, the end of a fuller physical development, which goes hand in hand with a better understanding of one's fellow men. Surely such an understanding develops to a marked degree the self-control, perseverance, loyalty, enthusiasm and alertness which we associate with our highest ideal of womanhood, and how often as we dash to and fro on the field, do we feel these powers being controlled and developed.

A girl enters our Friends' school, situated in the heart of the Mendip Hills, at the beginning of a school year. Though small,

she finds herself immediately thrown into the enthusiasm of winter athletics. At first she is almost timid of herself, as it were, and does not show her full value. But working among others of her own age, she soon "lets loose," and so, finds that she can climb the ropes in the gymnasium, walk the boom, and jump the horse with great ease. Each day a period of about forty minutes is given to gymnasium work for every class; unless a girl is physically unfit this is made compulsory. Besides this, every girl has to be out-of-doors from 8 a.m., until 8.15 a.m., on the large asphalt playground playing hockey, tennis, basket ball, *terza*, "rounders," roller-skating, or in some way on the move. When it is cold enough, water is poured down the slanting part of the playground and most wonderful sliding is enjoyed. At such times an extra period from a lesson is given up to this exercise. Besides the two large asphalt playgrounds, there is one enormous playing field, which is used for both boys and girls. It is large enough for about three hockey grounds, and at any rate, three football grounds; leaving the first eleven cricket pitch always wired in for the summer, besides leaving plenty of room for the running tracks. At least two afternoons a week from two until four are known as "compulsory games," everyone has to play. When it is a very wet day, or the ground extremely so (the latter we do not often consider to be the case, as in England we are used to mud!), boys and girls together, clad in football togs and gymnasium suits, go for a cross-country run, or paper chase. Running helter-skelter over the country, wading streams, jumping hedges, all self-consciousness is lost, and one experiences an intense physical enjoyment, and a feeling of perfect fitness, often new to the individual; which seems to flood one with a wonderful sense of power and enthusiasm, and gives one a fresh outlook on life. About twice a term there is "an all-day run," and often twenty miles are accomplished without realizing it. Of course, there is tremendous competition to get into the hockey teams (first, second and third elevens), which means that the smallest child is playing her hardest from the beginning of her career. To each team there is a captain and a vice-captain, chosen by the said teams. These teams all have outside matches against other schools and clubs, besides the many class matches and tournaments played within the school. This training and competition develops the feeling of *esprit de corps* to a fuller extent, and a girl learns the meaning of real team work, which is such a splendid preparation for life's work. The very fact of willingness to work under a captain, chosen entirely for her powers and knowledge in the special game, is a great gain. This must especially appeal to you in America who take persons for what they are, and not for what they possess; and in these days when women are working side by side with men for great causes and high aims, how essential that they should

be able to take their places, naturally and adequately. Certainly athletics give one the chance to develop this faculty while young.

Hockey is our chief game, and is played from September until Easter time, wet or fine; deep snow seems to be the only thing which really prevents this, and that comes but seldom. In the spring term, besides hockey, gymnastics and swimming, weeks are given up to training and practicing for "sports day," which comes off at Easter time, at the old scholars' reunion. We girls go in for the events in exactly the same way as the boys, with hurdle races, 440-yard, 220-yard and 100-yard races, long jump, placing the weight and so on, learning much from the boys with working on the same field. The "heats" are run about two weeks before the actual "sports day," when the worst competitors are knocked out. Of course, for all races we are started with a pistol, which to beginners in these things is almost alarming at first! The junior and senior events are taken separately. For each event are awarded points, and prizes; first, second and third, and all points are added up to find out who is junior and senior champion. To each is presented a shield, or cup, which is held for one year, and on which their names are engraved. In our Friends' schools we have great excitement finding out which of our schools stands the highest in athletic records. In the summer term, gymnastics, swimming, cricket and tennis are the chief athletic items. Tennis tournaments are played a great deal, and there are certain grades of courts; to play upon these, one has to show a certain amount of skill, to come up to the required standard. The first grass court players, at the end of the term, have tournaments in singles, to find out who is tennis champion of the school. The successful player is then presented with a new racquet with her name-plate upon it. In tennis and all games the faculty often get up teams to play the pupils, which causes great enthusiasm. I believe, as a whole, tennis is a far more popular game than cricket. But on "compulsory afternoons" in the summer, cricket has to be played. Swimming sports are taken too at the end of the term, here again prizes are given to winners in both junior and senior events. In all our Friends' boarding schools we have perfectly splendid tiled swimming baths, fitted up with diving boards, water shoots and all the latest appliances.

Upon leaving school a keen athlete at once joins her old scholars' team, and goes around playing other *alumnæ* teams, her old schools and others besides. At college she again finds herself in the thick of athletics, with her tennis four and hockey eleven to make. Then come rowing, punting and canoeing; all of which mean coming in constant contact with other colleges, schools and clubs. For the elevens there are often several matches a week, and if she wants to keep her place in the first team, it means regularity and punctuality, as there are many putting forth all energy to take her place. By showing special

skill in her team, she is presented with her "colours" from the captain and committee. So by the time a girl leaves college she has learned what will be of lifelong value to her; not only the faculty of working along by the side of others towards the same end, but the most important thing of all, to be a good loser, admiring the superior skill of the successful team and discovering the alterable mistakes in her own. And to the winners must come that special gift of courtesy towards the vanquished, and an appreciation of their pluck in a losing game. As the grand old school song puts it:

"Strife without anger,
Art without malice."

After college, there is still plenty of chance for a girl to keep up her athletics. Every village and town has tennis, golf and hockey clubs, and a good sportswoman has no difficulty in entering any of them. Here again, she has several matches a week against other clubs, colleges and schools. In many instances she comes in contact with opponents of many years ago; the very fact of meeting her friends year after year in this way, adds greatly to the joys that would not come to pass if it were not for the competitive side of games. Then, to get chosen to play for her county team, she must belong to a club which is recognized as a sufficiently good one to be affiliated with the county clubs. There are always numbers trying for one county team, and after trial games at which the selection committee are watching to choose the players, she has to put forth every energy to keep her position in the team with so many waiting to supplant her. Of late years eight different counties have met down by the sea; and for a week the keenest kind of contest goes on, as the higher the stakes become, the keener the competition. With great joy players find themselves running against those they ran beside at school or college, besides meeting old opponents too. The "artful dodger" still keeps her old tricks, whereby she got this name! The enthusiasm of the spectators at these tournaments is as great as at your baseball games, and in proportion to the size of our little country the numbers of onlookers are as large. We have hundreds waiting for hours to see the girls' big hockey matches. Besides the excitement of the game a girls' hockey match is really a very pretty sight, and quite impressive; not a word spoken (excepting an occasional one from the captain), every girl in dead earnest, and incapable of attending to anything but the game. Every player on each team is clad alike; in a trim, very short skirt, in some bright color, with usually a white shirt and tie to match her skirt, and when a scarlet-skirted team is playing an emerald green or purple team, there is no difficulty in distinguishing the sides.

At the time of the county hockey tournaments, competition does not end with the out-of-door matches, for in the evening the different teams compete in all kinds of indoor games. Of course, from the county teams are picked for the north and south of England, and then for the "All-England" team, which at present plays only twice, against Scotland and Ireland. But when funds will allow, it is hoped that England vs. United States of America will prove to be a thing to be enjoyed in reality, and not the mystical thing that it is now!

With all this training there is no limit to a girl's physical vitality; as a result of this, her body is more developed, and her mind in the same proportion is more clear. She has become a "good mixer," with a true sporting spirit. And those who do not reach the highest step in athletics, but have the love and enthusiasm for them, may be encouraged by Milton's words:

"They also serve, who only stand and wait."

But it seems to me that a true sporting spirit is really the goal of all these years of training. To me the best expression of that spirit is to be found in the words of your own Abraham Lincoln:

"I am not bound to win,
But I am bound to be true,
I am not bound to succeed,
But I am bound to live up to the light I have."

THE DEMONSTRATION PLAY SCHOOL OF 1913.

CLARK W. HETHERINGTON, UNIVERSITY OF WISCONSIN.

(CONCLUDED.)

D. The Problem and Analysis of Activities.

The proposal to organize activities instead of subjects of study *shifts the practical problem in education to the study of activities and the educational leadership of these activities.*

Educators have been devoted to the investigation of methods of teaching special subjects of study. They have spent relatively little time in studying the nature or the function of the child's spontaneous life activities and the relation of these activities to his development—organic, nervous, intellectual and moral—or to his adjustment. *Leadership in the organization of activities requires a knowledge and skill that makes the organized activities as natural as the unorganized, but more certain of educational results.*

The child's activities may be studied from many standpoints, of which the following are examples:

1. From the standpoint of the motor mechanism used—
 - The locomotor, or big-muscle mechanism,
 - The manual, or small-muscle mechanism,
 - The vocal and linguistic mechanism,
 - The sense-attention mechanism, etc.
2. From the standpoint of the regulating process involved—
 - The instinctive and emotional processes,
 - The intellectual processes.
3. From the standpoint of the initial sources of the activities—
 - (a) The hungers; organic hungers and needs for food, and the psycho-motor hungers for activity, experience, and expression, or
 - (b) The stimuli of sense situations.
4. From the standpoint of the genesis of the form of activities with interests, motives, beliefs, habits—
 - The hungers,
 - The instincts,
 - Experience as a result of reactions upon environmental situations,
 - Imitation,
 - Conscious judgment.
5. From the standpoint of the educational results or values of the activities—
 - (a) For the development of the organism—
 - Organic development with a system of habits,
 - Nervous development with a system of habits,
 - Instinctive and emotional development with a system of habits,
 - Intellectual development with a system of habits and ideas.

- (b) For the adjustment of the organism to phases of racial activity and culture—
 - Economic, or vocational adjustment,
 - Recreative, or avocational adjustment,
 - Fellowship adjustment,
 - Citizenship adjustment,
 - Domestic adjustment.
- 6. From the standpoint of a practical educational leadership of the activities for complete child living.

All these points of view are important in the investigation of activity and in the training of the leader or teacher, but for the practical problems of educational leadership the last point of view is essential and may include all others. It is distinctly the leader's or teacher's viewpoint. It demands a classification of the child's activities that gives the more or less distinct but natural phases of his complete active life; and that makes it possible to administer his complete living. This classification is essential further as a basis for the organization of a progressive educational "curriculum" of activities:

1st. That will use all the mechanisms and regulating processes.

2d. That will feed all the hungers, provide for reactions upon the whole environment and give opportunity for full expression of all valuable budding interests.

3d. That will hold true all through childhood, tending to evolve naturally into the racial forms of activity, and

4th. That will give all the education values.

All those demands seem to be realized tentatively in the following classification: (a) Big-muscle activities; (b) manipulating and manual activities; (c) environmental and nature activity; (d) dramatic activities; (e) rhythmic and music activities; (f) social activities; (g) vocal and linguistic activities; and (h) economic activities.

Description of the Activities.

A description of each of these groups of activities will make its educational meaning and the whole classification clear. No significance, except one of convenience in description, is attached to the order of the groups as given.

It will be observed that the activities in each group begin early and continue through childhood; that they arise out of some hunger, instinct or innate capacity in human nature; that these same traits have given rise to some phase of racial life or culture; and that each group has some special value in the development and adjustment of the child.

The Big-Muscle Activities are fundamental to all the activities. They arise out of the primary hungers for activity; begin

in the random movements of the infant; develop through the various stages of locomotion and diverge during childhood under the influence of special instincts into such special forms as gymnastics, games, dancing and athletics.

1. *Gymnastic Plays* arise from the self-testing impulse. They are personal motor achievement plays and express the enthusiasm for self-realization.

2. *The Dancing Activities* add pleasure in rhythm. They begin in spontaneous forms and take on traditional forms through imitation, developing the sense of rhythm as well as the capacity for artistic expression in body movements. They also have deep social meanings and influences, especially during the adolescent years.

3. *Games and Athletics* arise from the hunting and self-protecting instincts and from the gregarious, egoistic and fighting instincts which find expression in rivalry, and which have been such powerful forces in the rise of civilization. These instincts develop progressively in games of fleeing, chasing, hiding, seeking, capturing and escaping, and later, team games of conquest.

These big-muscle activities are the developers of the organic powers and the fundamental nervous powers; i.e., they are the educational source of vigor, resistance to disease and general nervous vitality and skill. They lay the foundation in the adult for the capacity to labor. They establish wholesome forms of recreation. While regarded usually as mere muscular exercises or "pastimes," these activities, especially the games, *carry the discipline of the racially old instincts at the foundation of character*, and are therefore primarily instinct educators and fundamental in their influence on character development. They carry the "social spirit" and discipline the social instincts, emotions, and enthusiasm. Hence in the education of children they must be given a large place and be guided carefully as the most important laboratory activities in the moral phase of education.

The Manipulating and Manual Activities arise out of the manipulating impulse which satisfies the hungers for activity and sense experience. Gradually, under the influence of the "constructive" impulse, imitation and self-expression, the various manual activities arise. These tendencies in human nature, coupled with needs for food, protection and expression, have developed the industrial enterprises and graphic arts of man. In the child they begin in general manipulation, expanding along the lines of construction with blocks and miscellaneous materials; modeling, scribbling, drawing, coloring; and then construction with tools in paper, wood, stone and iron, and in plastic materials, textiles, foods, etc. When the child expresses esthetic feelings and ideas in these activities the manual arts appear. This manipulating impulse, combined with the social, gives a large number

of plays and games. Each of these tendencies is represented in the complex occupations, crafts, arts, modes of expression and recreations of the adult. They give the spontaneous beginnings of activities which, when developed, include a large part of applied science.

Under leadership the values of these activities in the development of nervous powers for manual skill, in the ability to think in mechanical terms and to design and execute, in the expression of esthetic ideas and the development of esthetic feelings and in the discipline of elemental traits of character, are well recognized. As Dewey showed, they may be organized to unite the individual's social feelings and thoughts with the industrial problems of the race. For the masses they underlie economic adjustment and industrial adaptability. They are important for the nervous, moral and esthetic stability of the non-industrial classes.

Leadership in these activities is needed from infancy to maturity, first for cultural education, then for vocational and recreative results. In this leadership, the ages between seven and ten—the critical, yet most neglected years—when impulse and skill are furthest apart, need special attention.

Environmental and Nature Activities fall into two related classes: (1) excursions and (2) nature experimentations. The instincts that have led to the world's exploration and to the development of the natural and physical sciences are here expressed.

(1) The *excursions* arise from the exploring, foraging and migratory instincts and arouse great enthusiasm. They begin with the creeping of the infant and continue all through environmental activities of later years. These excursions give some of the organic and nervous values of big-muscle activities; they develop the self-preserving instincts and powers; they give the opportunities for observation, the collection of information, and the satisfaction of curiosity concerning nature and civics. Leadership easily perfects the educational values in the spontaneous tendencies to these activities, as indicated in the following suggestions which grade naturally by age periods.

For the little children, short trips give opportunities for broader "free play" activities in the environment, for a larger sense experience, for collections, for learning the names of natural objects, for simple observational games and for instruction concerning things which catch the attention.

For the larger children excursions cover the three ideas of adventure, nature observation and civic observation as follows: (a) half-day "hikes" or week-end camping trips, including outing or "scouting" arts; (b) trips to the fields, woods and bodies of water, or to farms, or to plant or animal experimental stations with observations on the geographical features, on plants and

animals and their breeding processes with collections, maps, etc.; (c) trips to industrial and commercial institutions, to historic places, to civic institutions and centers, to public service centers, etc., each with investigations. From these natural activities the larger geography expands.

(2) The second half of the environmental and nature activities, *nature experimentations*, arise from curiosity about nature and the experimental manipulation of natural forces. They fall into three groups:

(a) There is playing and experimenting with physical nature:* namely, playing with water, air, heat, mechanical devices, sound, light and electricity. These activities begin in the same manipulating tendencies that are the foundation of the manual activities, but diverge under the control of different instincts. They grade naturally by age periods and through leadership develop problems in physics.

(b) There is playing and experimenting with animals; namely, playing with pets; feeding and caring for animals; training them, capturing, raising and taming wild animals; breeding animals, etc.

(c) There is playing and experimenting with plant nature; namely, planting, raising and caring for plants and flowers; experimental gardening to find out what nature will do and also for the economic value of the produce.

These two latter groups of nature activities with the field observation and collections give all the essential elements in the relations of plants and animals to the life of man, and give, through leadership, the natural basis and enthusiastic interest in the problem of nature study and "civic biology."

The specialized sciences have no place in child life. These nature activities give what is natural to child life and interest, and lay the foundation for a more advanced study later.

Dramatic Activities arise out of the imitative and dramatic tendencies and the hungers to experience the form and content

*The content of these physical experimental plays will be better illustrated by the following outline:

Water—Playing with water, pouring, wading, splashing, watching objects in water, throwing objects into water, building dams and water wheels, watching the action of water on land, "erosion models," etc., which develop problems in fluids.

Air—Playing with air, sail-boats, kites, windmills, aeroplanes, which develop problems in air pressure, air currents, wind, temperature, humidity, rainfall, etc.

Heat—Watching fire, making fires, observing friction and heat, playing with toy steam engines, thermometers, which develop problems in heat, combustion, expansion and contraction and other effects of heat.

Mechanical Devices—Playing with hoops, tops, pulleys, wheels, toy machines, gyroscopes, pendulums, levers, watching thrown objects, balancing objects, etc., which develop problems in motor dynamics.

Sound—Vocalization, beating and drumming, blowing on toy instruments, "listening to shells," speaking-tubes and telephones, experimenting with conduction through air, water and timbers, with vibrating bodies, echoes, etc., which develop problems in vibration, noises, tones, music, etc.

Light—Playing with reflectors, mirrors, prisms, lenses, water refraction, glasses, telescopes, which develop problems in light, color, optics, time, etc.

Electricity—Experimenting and playing with magnets, batteries, induction coils, telephones, telegraph instruments, dynamos, electric motors, electric lights, etc., which present problems in electro-dynamics.

of conduct and express environmental situations. In the adult these tendencies and hungers have developed the dramatic arts. In the little child dramatization intensifies ideas and bears the same relationship to an appreciation of conduct that manipulation bears to knowledge of physical nature. The child interprets conduct through his own motor activities and later expresses an ideal. In all classes of children these activities grip the imagination. They correlate and give added zest to other phases of activity. Under leadership they plant rich associations that give immediate educational values and help develop the capacity for some of the higher recreative arts in the adult.

Leadership for the little children should supply opportunities for a broad range of imitative dramatization of single, social and environmental situations. For the larger children, leadership should be given in the dramatization of social situations, in the construction of plots from stories and history, in the use and adaptation of plays and in the development of simple pageants. These latter forms of dramatization will lead towards the celebration of holidays.

Rhythmic and Musical Activities arise out of vocal and manual experimentations and the pleasures derived from rhythm, tone and melody. These pleasures with their emotional relationships have created the musical arts of man. In the child, rhythmic and musical activities begin in crude vocalization, bodily movements and drummings and develop through various stages of complexity. There are (1) bodily rhythms, as running, stamping, marching, skipping, etc., up to dancing; (2) vocal rhythms and tones, as counting, repeating sounds and tones, up to poetry and singing; (3) drummings and beatings with sticks, fingers or cans, picking sounds on strings and blowing sounds on bottles or shells, up to the use of drums, cymbals and string or wind instruments.

These are all music activities to the child, but the music of the race is highly evolved, and it has a complex written language. It is a simple matter to organize the musical activities characteristic of each age period, but the transition to the musical activities of the racial type or to an appreciation of these is achieved for the masses only through a broad association or skilled leadership. Individuals differ enormously in musical capacities. All children should have their musical impulses developed to the point of adjustment in the community social recreative life.

In the transition three methods of leadership or instruction are possible: (1) The natural musical activities of the child may be organized and led into the racial type; (2) the gap may be bridged through play methods of instruction; or (3) music may be interpreted as a formal subject of study that can be taught only by formal methods under the discipline of instruction. The last is the traditional method and essential for any advanced

skill. The second method secures results especially with the little children. The first method is used frequently in boys' clubs and in the organization of children's orchestras.* It has been highly refined on one side for training in rhythm by Dalcroze.† This method has back of it the power of instinct, it opens the channels of natural development to leadership, it can be supplemented by all other methods as desired.

Social Activities arise out of the social instincts and hungers. These instincts have amalgamated all human instincts for the development of society. Their expression in the child gives social experience and they frequently take the form of experimentation with human nature.

The play school is a child's social center. In addition to the social life involved in each group of activities, there is a general social life and spirit. All the social relationships of the special activities are looped up in this larger social unity. It involves all human relationships in the school and it radiates into the social environment and the home. In these social activities are expressed all the impulses of developing human nature in social relationships. Social attitudes, habits of speech and manner of address are developed which contain many inconsistencies and conflicts and which change in emphasis and importance by age periods, but fuse gradually into a system of ways of acting that determines the adult's social adjustment. In addition, there are the developing ideas and habits in the relationship of boys and girls that differentiate during the adolescent years into sex habits and ideals and lay the foundation for adult domestic adjustment. Therefore in the general social life of the play school and in the social life connected with each special group of activity, conduct must be guided by each leader according to accepted social standards of individual and group fair play, good humor, courtesy, justice and common sense, yet ideal social relationships. The foundation for social and citizenship adjustment, sex hygiene and domestic adjustment must be established in this leadership.

A special social hour should be organized to coördinate the social side of the activities and to give the opportunity for establishing democratic ideals. From this the leadership should extend to the spontaneous group organizations in and out of the play school.

Vocal and Linguistic Activities arise from the vocalizing and communicative instincts. These instincts are the primary elements in the evolution of the languages and the literatures of the world. In the child, these activities begin in vocalization and develop through imitation and the need for communication into the vernacular.

*See Dykema, in Chubb, *Festivals and Plays in School and Elsewhere*.

†Sadler, M. E., *The Eurhythmics of Dalcroze*.

Linguistic activities are associated with each group of activities. The child tends to vocalize his thoughts and feelings. He is the great questioner. Conversations arise. Thus he develops language as a tool and elaborates a system of ideas. Both these tendencies should be perfected through leadership. Language is the tool of knowledge and rational adjustment. Conversation consciously developed through sympathy or elicited and directed is the method that gives progress in language power, thought and systematic information, and carries with it the living motive.

In the activities interests develop that, under leadership, are expressed in narratives and discussions, and these are the opportunities for mind "fertilization," as well as the elevation of experiences to the level of general ideas and conscious understandings. These conversations are also distinctly language lessons and should be guided carefully as such.

With the development of the activities and interest under leadership, the need arises for a written language and it should be taught at this time. *When gained as a tool, it should be used, not in reading unrelated stuff, but in connection with the activities as a source of information, and as a real phase of living.*

For the little children, story-telling of a rational kind should have a prominent place and later this function should become supplementary in helping the individual select stories to read that are adapted to his needs. It has been demonstrated that leadership will bring children to the realization that there is a literature to cover each interest and satisfy each desire in life.

Number, for the child, is a linguistic activity. It should be developed in connection with his games and later manual and environmental activities.

The absorption of a foreign tongue, naturally by its use in play, is another phase of these linguistic activities, and when the environment makes it desirable can be easily brought about.

Economic Activities arise out of organic hungers, the acquisitive impulse and economic needs and desires. The child is dependent and gains his economic adjustment through the family, but the necessity of labor to produce wealth and of paying others for wealth desired is ever present, and frequently arouses economic activities which need guidance. So leadership should be given in earning money by service or effort that produces economic values. The organization of vacant-lot gardens and leadership in marketing produce is important. The opportunities for house and yard repairs at home and in the neighborhood need leadership. Taking contracts, with the figuring of materials, cost and profits, are frequently possible even among children. Banking, the use of the United States postal savings depositories, and personal bookkeeping are phases of these activities. The dramatization of store and house with buying and selling familiarizes the child with the social forms of exchange.

Summary.

If the analysis of the several classes of activities as given is practically correct, then we have a natural grouping of child activities susceptible of practical organization and administration for efficient educational results when considered from any standpoint of educational theory or practice. Criticism and continued experience will doubtless dictate some changes, but the classification shows at least the possibility of organizing several groups of activities:

(1) That include all the spontaneous and traditional tendencies in child life;

(2) That express, in child form, the human tendencies that have created civilization;

(3) That retain in natural and related forms the germs and expanding lines of every subject of interest that has arisen with adult civilization;

(4) That give the opportunity for so directing the child's living forces that he will expand naturally according to his capacities into an inheritance of some part of the race achievements;

(5) That meet the demands of every aim of education whether of development or adjustment, and therefore that relate the claims of physical, moral, vocational and cultural education;

(6) That simplify the problem of coöperation between the play school center and the home;

(7) That present the basis for a school program which will *not* devitalize children who are subjected to three or four hours of it, and may be extended to the whole waking life for three hundred and sixty-five days in the year, making every child physically, intellectually and morally stronger.

II. THE SUMMER DEMONSTRATION.

The summer demonstration of the play school was held in the eucalyptus grove west of the cinder track on the campus of the University of California. Opening June 23 and closing August 2, it lasted six weeks corresponding to the summer session of the University. The daily session was confined to the morning hours in order that the school might not conflict with the work of the model playground organized for all the children of Berkeley, as a practice center for students.

The fact that the play school lasted but three hours a day for six weeks in contrast to the theoretical all-day, 365-days-in-the-year program, and that some of the leaders could give only part time, put limitations on the demonstration that must be constantly kept in mind.

Nevertheless, a conservative judgment, based on the attitude and comments of children, parents, play school leaders, educators and social workers, would pronounce it a success.

The plan adopted for the summer play school emphasized those elements that are fundamentally important in the child's education and susceptible of demonstration during a brief period, i.e., the effective organization and leadership of activities, perfect freedom yet perfect discipline, and the insinuation of a social spirit and ethical ideal into every activity.

The eucalyptus grove, converted from a university wood and trash pile into a place of beauty, had many advantageous points for a play school. Contrasted with the ordinary schoolroom and yard, it was a source of inspiration to those interested in education and child welfare. The only inconvenience experienced from the elements was due to the influence of the wind in those activities requiring the handling of paper, but this could be easily remedied by a few adjustable canvas walls.

Because of uncertainty as to enrolment and conservatism in expenditures, the equipment in the several activities was reduced to the minimum, which fact caused many administrative complications. The cost was greatly reduced by the coöperation of the agricultural, manual arts and zoölogical departments.

Though the general equipment was very simple, the material environment can be made ideal for a play school with little additional expense, and it will then serve as a model for the summer months in other communities. For the winter, additional protection from the rain and wind would be needed.

Applications for admission were so numerous that the enrolment had to be limited almost from the start and a long waiting list accumulated. The total enrolment was 207; the waiting list 99; the average daily attendance 147; maximum attendance on one day 207. Totals by groups were: Four- to five-year-old group, 56; seven to eight, 43; nine to ten, 45; over ten, girls, 34, boys, 29. The many applications for the admission of children above and below the age limits do not appear in these figures.

Though applications were made by parents for younger children, the enrolment was limited to those between the ages of four and twelve. However, three adolescent girls and two adolescent boys were enrolled because of their personal insistence and willingness "to do anything to get in."

Because of the necessity for accompanying their parents on vacation trips, some pupils dropped out and a few were substituted. This fact caused the daily attendance to fluctuate, though the pupils who remained in town were faithful. It was the unanimous feeling of the staff that the enrolment of another year should be confined to those who could attend regularly.

For convenience, the children enrolled were divided into four groups: those four and five years old; six and seven; eight and

nine; and ten to thirteen. In the older groups, the boys and girls were separated. This classification worked very satisfactorily this year for the purposes of the demonstration, both from the standpoint of the children and that of the organization of activities. But, under all-year conditions, it would have to be more detailed and flexible.

Through the efforts of several university officials, a staff of leaders or teachers was organized, which was willing to meet the demands of a brief summer demonstration. Such a staff was necessarily quite different from that required for the regular school, and included a supervisor, a group of expert leaders and assistants drawn from the summer session students. The supervisor was responsible for the classification of children, the organization and leadership of the activities, the physical and moral conditions and the social spirit of the whole school.

The activities of the children between four and six years of age were organized under one leader, with assistants. Children above six were organized departmentally under experts in the several activities. Though departmental organization for the younger children may be inadvisable under usual conditions, it seemed essential under summer conditions to give a clear demonstration.

It was planned to have a summer session student in charge of each group of children to look after their general welfare and assist the leaders, but only one full-time assistant could be secured, and she was placed in charge of the six- and seven-year-old group.

Departmental leaders were appointed for the various activities—the big-muscle, manual, environmental and nature, musical and linguistic (with which the dramatic were combined). The supervisor gave special attention to the social activities.

As two of the leaders could give only part time on account of lecture courses and as student assistants could be secured only for irregular hours, the number involved in the work was large and was no criterion of the staff necessary for a play school under normal all-year conditions.* The large number of visitors also made necessary an assistant to the supervisor and a gate-

*Those involved in the summer demonstration were as follows:

Beach, Dr. E. C., Director Department Physical Education and Play, Summer Session.

Hetherington, Clark W., Director of Play School.

Hetherington, Mrs. D. Alford, Supervisor of Play School.

Shafer, Miss J. F., Assistant to Supervisor.

Hunt, Miss, student, attendant at gate (part time).

Leader of four- and five-year-old group, Miss Rose Sheehan, supervisor kindergarten department, Sacramento; assisted by the Misses Mizpah Jackson and Helen Hoskins and Miss Vera E. Holland, who cared for the physical needs of the children, and part time by Miss Theresa Summerfield.

Student assistant in charge of the six- and seven-year-old group, Miss Anna Lang. Leader of big-muscle activities, Mrs. Irma H. Hutchinson, supervisor of physical training, elementary schools, Los Angeles; assisted by Miss Mahle Ish and part time by the Misses P. Reed, Edna Farley and Lelia Grasscock.

Leader of manual activities, Mr. Philip S. Hasty, instructor of manual training,

keeper. This situation, however, did not affect the attitude or interest of the children.

The departmental leaders were secured from among public school-teachers of subjects most closely related to our classified activities. None of them were trained to handle all the phases of the group activity for all the age periods. Some problems developed because of this fact. While there was a slight tendency for the spirit of the teacher to appear instead of that of the leader, this was to be expected, especially in a demonstration of such short duration. As the ideal of the play school became clearer to the staff, its already earnest efforts were in most cases intensified by enthusiasm and self-sacrificing devotion; and it was to this fact that the success of the demonstration was largely due.

This enthusiasm may shed some light on the problem of securing play school leaders. The question of securing instructors for a comparatively new field is always replete with difficulties, but teachers are alert, anxious to gain help on every hand and many are already using methods, wherever possible under their cramped conditions, which tend to relieve the worst features of our schoolroom work. They will rapidly accept every better way of doing things, when our practical school organizers give them an opportunity.

In spite of the brevity of the demonstration, the several groups of activities were organized and conducted through the session with the exceptions of the physical nature experimentations, for which we had no equipment, and the economic activities. The dramatic activities were combined with story-telling and only partially developed.

Story-telling was emphasized, but, apart from the conversations connected with the several activities, no general attempt was made to organize the more specialized or developed linguistic activities or to attach interest to book sources except as this could be done incidentally. Such effort during the brief time at our disposal would have distracted attention from what we considered the fundamental part of the demonstration. Another summer it will be possible to organize the book resources connected with the activities.

The program of three hours daily made it impossible to organize apart from the assembly period a special social hour.

Oakland Intermediate School; assisted part time by Mr. Geo. H. Jensen and Miss Lulu West.

Leader of environmental nature activities, John R. Imrie, principal of the LeConte School, Berkeley; assisted by Miss D. Fish (resigned) and then by Miss Jean Cunningham of Berkeley, and part time by Mr. J. E. Cuddeback and Mr. Wade Thomas. Mr. H. J. Snooks was appointed caretaker of the animals and equipment borrowed from the zoological department.

Leader of story-telling and dramatic activities, Miss Alice O. Hunt, teacher of grade schools, Alameda.

Leader of rhythmic and musical activities, Miss Olive Wilson, teacher of music, San Francisco; assisted by Mrs. Ida E. Varney and Miss Harriet Thompson.

Particular attention, however, was given to the general social life of the children, with most satisfactory results.

We had no apparatus to develop the gymnastic plays, but the games and dancing demonstrated again the dominant value of big-muscle activities. Though our program does not make it entirely clear, we wished to show that the big-muscle, the manual and the environmental and nature activities should, under leadership skilled in the conversational and social elements, occupy the greater part of the child's time.

The excursions had to be confined to Saturday mornings, and the unusual hour caused some difficulty at first, but they grew in popularity. One overnight trip to Redwood Cañon, made possible by the summer school instructors in physical education, was a source of great satisfaction and pleasant associations to the older boys. A similar trip for the girls was prevented by rain.

A very earnest effort to demonstrate the development of musical power by play methods secured valuable results with the little children, but failed with the larger children.

The questions of choice of activity by the children and the time for the activities, two problems of broad educational significance, had to be settled more or less arbitrarily. The question of whether or not the children should be allowed to choose one or more activities from the classified list and neglect the rest, or should be organized according to the full program, was settled in favor of the latter alternative for four reasons: First, we wished to test the soundness of our classification. If sound, all children will enter all activities, but with wide individual variations. This is a problem to be met by leadership. Second, under present social conditions, the choice of children is untrustworthy until they are organized in activities in which latent hungers and instincts are expressed. Third, the form of the activity is controlled largely by imitation. Fourth, we have no data as to the distribution of time in the different classes of activities at the several age periods necessary to develop efficiency in adult life. For these reasons we organized practically all the children in all the classes of activities.

DAILY SCHEDULE BY GROUPS AND PERIODS.

Hour	4 to 5 Group	6 to 7 Group	8 to 9 Group	10 to 13 Groups Girls Boys	
Opening Assembly Social Period: Music, Announcements, etc.					
		Big-muscle activities		Linguistic activities	
9.00 to 10.00	This group having a special leader required no pro- gram adjust- ments	Linguistic activities	Manual activities	Rhythmic musical activities	Big-muscle activities
10.00 to 11.00		Manual activities	Linguistic activities	Big-muscle activities	Rhythmic musical activities
		Rhythmic musical activities	Big-muscle activities	Nature or manual activities	Nature or manual activities
11.00 to 12.00		Nature activities	Rhythmic musical activities	Manual activities	Manual activities
		Big-muscle activities	Nature activities		
1.30 to 5.30	Activities on model playground and excursions				

Saturday mornings: Excursions. Overnight excursions for older groups.

Instead of allowing each child to enter into an activity only when the impulse prompted, we had a definite time for each activity. Our reasons for this decision were: First, the former plan required the leader to be on hand at all times and some of our leaders could give only part time; second, the first plan mixes the age groups and this complicates the problem of the leaders; third, in the spontaneous life of children, the impulse of the individual yields to the will of the group; fourth, it has been demonstrated on some of the best playgrounds that children prefer a schedule of activities: a definite time for an activity; fifth, the daily and mental physical rhythms, the fluctuations in susceptibilities to enthusiasms at different hours and the transitions of interests must still be worked out. Therefore, each activity was scheduled at a specific time, as shown in the foregoing schedule.

Results and Criticisms.

Health. The health of the children was excellent. Even a casual observer could see the improvement during the six weeks. Although contagious diseases existed in the city, none were contracted in the play school. Three children had to be sent home

on account of pediculosis, but later returned in satisfactory condition. The physical freedom, the pure air, the opportunity for social contact (the three factors so lacking in the regular school-room and so vitally necessary to the development of efficient human beings), were most conspicuously present. At the close of the daily session, the children were as fresh physically and mentally as at the beginning.

The result with the children. The children were exceedingly happy, free, alert and concentrated. A backward boy in the public school said: "I don't know why, but somehow I like to go to this here school." On the final day several children cried because school was closing and many more expressed earnest regrets. Discipline, as the word is ordinarily understood, was practically nil. A look or a word and, two or three times, a brief discussion were all that was necessary. A suggestion that a child was discourteous or should go home was considered the extreme punishment.

The children were free within the limits of staying with their groups. Naturally there was noise. Habitually the little children passed from one activity to another on the run and with a whoop. But there was law and order in it all, and frequently a quiet that was surprising.

Concentration was generally marked. The children were indifferent to outside attractions. One day when two hundred visitors were present "the absorption of the children in their work" was observed as a striking characteristic of the school. Where teaching developed in the activities, attention was as easily held as within four walls. The only place where "holding attention" appeared as a problem was in the more formal side of the musical activities, and even here it was in process of practical solution when the school closed.

The courtesy in the leadership soon developed the spirit of courtesy and coöperation among the children. An older "difficult boy" a "leader in trouble" soon found himself a leader in courtesy and coöperation.

Instead of the "teacher" driving the children, one might almost say that the children came to the point in several activities of driving the leaders through their eagerness. Frequently, though not generally, the attitude approached the ideal: one of eager and intense effort, with the idea of the leader as an aid in satisfying hungers and as a source of appeal in case of difficulty. The spirit and attitude of the children during the summer demonstration seems to indicate just what has been revealed many times before: that it is possible through leadership to have perfect freedom combined with perfect control. This is the ideal.

The attitude of the parents. Many parents visited the school. Some came with their children and spent the morning watching the children and leaders in their activities. Some brought their

home habits and frequently "nagged" their children, but they saw quite a different method of dealing with children demonstrated.

This visiting by parents is suggestive in fulfilling the theory concerning the relationship between the home and the school. If the play school is to become the community center of the child's active life, it must also become a social center for parents where they may see their children in that life and learn how to cooperate in it. Several parents volunteered the information that they would forego a vacation next year in order that their children might be in the play school.

Attitude of visitors. Generous, indeed, was the attitude of visitors. The staff assumed the policy that visitors had a right to see and learn to the limit of actual interference with the activities and if the visitors were met with courtesy they would respond in a like spirit.

Visitors were numerous, interest exceedingly keen, but harsh criticism entirely lacking. Criticism was expected, but less was received than might easily have been given by educators. The desire for information was evinced by the many questions. All through, the attitude seemed to be one of generous inquiry. The majority of inquiries covered the relation of the scheme to the public school system, the problem of cost, the place of the formal subjects of study in the program of activities, and the source of "competent teachers."

Expressions of approbation were numerous. A Boston educational woman said: "I have seen many educational experiments in the United States, but this is the finest." Such phrases as "this is perfect" or "ideal," or "this seems like a dream," or "you are on the right track—keep up the good work," were frequent. One mother voiced a sentiment broadly held, "I should consider it a great privilege if I could keep my children in such a school all the year." More substantial was the declaration of a leading commissioner of recreation from Oakland, that another year the play school administration might have two or three of Oakland's expert playground directors for their full time while paid by the commission, in order that they might catch the spirit of the play school.

Following a paper on the play school in the Pacific Coast Conference and a question by an auditor as to whether the play school would be "absorbed" by the public school, Professor Rugh of the University of California declared that in his opinion the play school would absorb the public school, as a part of the whole. An elderly teacher passed in this interesting statement headed "An Observer's Comment on the Play School": (1) This is the beginning of the end of war; (2) courtesy is wonderfully developed here; (3) democracy is the keynote of the play.

Recommendations.

1. As the theory of the play school covers the ages from early infancy to the time approximately of adolescence, arrangements should be made another year for handling younger and, if possible, older children. A nursery for infants between the ages of one and four years, having sleeping and feeding accommodations with a professional nurse and a special leader of infants in charge, should be established where mothers may bring and check or stay with their infants and where both mothers and teachers may see the physical care and educational leadership of infants demonstrated. To handle the older children, more comprehensive arrangements for manual activities, such as cooking and for the leadership of excursions, will have to be made, and the leaders must be appointed early that they may have sufficient time to prepare themselves for the work.

2. Opportunities should be afforded the summer session students having the required ability to gain experience and to secure credit either as group leaders or as assistants to the department leaders. This would also solve the problem of assistants.

3. Though not essential, it would be of great value to have some stationary gymnastic apparatus installed. Very few teachers or school authorities appreciate the function of apparatus in the spontaneous play-life of the child.

EDITORIAL NOTE AND COMMENT.

BERKELEY CONVENTION.

The University of California proved to be splendid hosts for the convention. The meeting places were ample and conveniently located. The placing on the University campus of the lectures, the regular physical education practice and the demonstration play school saved much time for the delegates. The local committee wisely refrained from spreading the convention over San Francisco and adjoining cities to show incidentally buildings and equipment as is sometimes done. Climatic conditions were an agreeable surprise to the Eastern delegates who went to the convention expecting hot weather. The low humidity, cool breezes and the absence of rain made Berkeley a very attractive convention city.

The speakers came almost altogether from west of Chicago. The four hundred delegates who assembled were also largely from the Pacific coast, a goodly number of them students in the University of California Summer School. Physical training on the Pacific coast is developing rapidly. The presence of the national convention this year and the regular annual meeting of the Pacific Coast Society should give direction to the development of physical training. The colleges and universities have made apparently a larger use of outdoor activities than have the public schools. The coöperation, however, of the playgrounds and the public schools is increasing the use of outdoor facilities in the public schools.

It is unfortunate that the championship games between Leland Stanford and the University of California have fallen through because of the disagreement regarding English and American rugby. The settling of their dispute will help to stimulate outdoor activities. The equipment at Leland Stanford allows for the large development of intramural sport, while the equipment of the University of California at present prevents any large development of outdoor activity.

The delegates rightfully expressed splendid appreciation for the work of the local committee.

THE TIME FOR THE NATIONAL CONVENTIONS.

The time selected for the Berkeley convention proved to be a good one for the teachers of California and for the students at the University of California. It was not a good time for many from the Pacific Northwest, the Middle West, the East or

from the South. It was inopportune for the leaders in physical education who are teachers in summer schools in other sections of the country. Three periods of the year have been selected for conventions; First, during term time; second, during the summer, and third, during the Christmas vacation. The conventions during term time have brought together chiefly the delegates from the immediate territory about the convention city. The summer conventions have failed to bring together the leaders in physical education from the various sections of the country. It is clear that conventions in various sections of the country should be held at a time convenient to the members of that locality. It is also advisable to get together as large a proportion of the national leaders from all sections of the country at as regular times as possible. The largest percentage of leaders from all sections have been assembled at the meetings held at New York and Chicago during the Christmas holiday season. At present the National Federation, with representatives from practically all physical education interests, the National Collegiate Athletic Association, the College Directors' Society and the American Physical Education Association Council all hold their meetings during the Christmas holidays either in Chicago or New York. An annual convention at this time held in the same city would get a larger proportion of the leaders together than would any other plan. Many of the leaders are already assembled at that time. There is a demand for the National Convention which assembles the majority of the national leaders from all sections of the country and also for sectional conventions which give opportunity for the rank and file of the teachers from particular sections of the country. The National Council should consider the advisability of recognizing these two types of conventions; first, they should encourage the organization of more section divisions in various parts of the country, and second, discuss the advisability of holding the National Convention (at least once in three years) at the time and place of meeting of these other physical training agencies.

NEWS NOTES.

LETTER FROM DR. R. TAIT McKENZIE, PRESIDENT OF
THE ASSOCIATION.

July 19, 1915.

Dear Dr. McCurdy:

I am sending a paper by Miss Kein on massage which I fear will be too late for the meeting but which you can publish in the REVIEW. It is addressed to DeGroot as the chairman of the committee. I am also sending a cable for the meeting—greetings. Since my arrival I have been interviewing the war office and inspecting camps and hospitals to get in touch with the conditions here and see what I can best do, and it was only this week that I completed all the formalities for taking a commission as lieutenant in the Royal Army Medical Corps. I report at Aldershot next Wednesday and start with a strenuous three weeks' course in gymnastics, riding and drill, to get thoroughly acquainted with army procedure and habits. I will then be put on the physical training work in some capacity, the exact nature of which I don't know as yet. In the meantime, I am getting my kit ready and my outfit completed. They have a wonderful coat called a Burberry that is water proof, with a fleece lining that buttons in. This can be unbuttoned and the lining used for a dressing gown or nightshirt. It can be used for walking or riding and is both rain and wind proof. The uniform is also most handy, great pockets in breast and sides, breeches with leggings or puttees and a belt of leather and service cap of khaki.

When the war broke out all the instructors in training at Aldershot rejoined their regiments at once and the work was disorganized badly, but now they have substituted a new and excellent system. The physical training work is made out in eight tables of simplified Swedish exercises, in which the day's order is reduced to about six divisions; this is followed by running, jumping, climbing, etc. Colonels of regiments recommend a man, a sergeant usually, who comes to Aldershot for three weeks where they work him very strenuously by giving him one table a day (one hour), followed by his giving it to his neighbor and vice versa. After that free and field exercises, obstacle practice, etc., one hour bayonet fighting and in the afternoon the same with simple lectures on anatomy and tactics. The exercises are done with wonderful precision and the commands come like the crack of a whip. It would do your heart good to see it. The men who pass then go back and give the exercises to the men, and the physical training for the whole army of 1,500,000 men is being organized in this way.

A PLEA TO WOMEN FOR THE USE OF COMMON SENSE
IN PHYSICAL TRAINING.

BY

A STUDENT.

Doubtless if the following question were put to all of the young women who are studying physical training preparatory to teaching it, "What do you consider is the end and aim of this

work?" the universal answer would be "To make people healthy," and yet how many of these same young women are really keeping that answer in their minds and improving their own health while they are taking the training? Why is it that the majority of doctors, even though they may not actually disapprove of athletics for women, at least are very unwilling to encourage them to any degree, and feel that the work is far too violent and that they often do more harm than good? And why do girls often break down after they have been taking work in physical training, and become really semi-invalids? Is it the training that is at fault, or are the girls themselves to blame for their lack of judgment in the way they go into the work? It seems to me that the latter reason is the real cause for any harmful results, and until girls can be made to see that athletics will never be universally considered beneficial for them unless they themselves have a different attitude towards them, there will continue to be a decided prejudice.

Unfortunately the modern girl in her endeavor to be a "good sport," has gone as far in the extreme of overexercising, as the girl of Jane Austen's time went in the extreme of inactivity in her artificial life, and the result in many cases is proportionately poor health.

Why is it that almost all girls are ashamed to admit that they take care of their health? If girls studying physical training could be made to see the inconsistency and futility of giving all of their time to the study of a subject which has as its main tenet "health," and then of being unwilling to put into practice or to recommend any of its principles, it would seem that they would change their attitude.

I asked a girl who was studying physical training and who looked very tired, what time she went to bed. She said, "Why do you ask?" I told her my reason, and she agreed at once that she was tired, but added, "I'm ashamed to tell you what time I go to bed,—it's so early." And that expresses the universal attitude toward the care of one's health, and is an aspect of the same shamefacedness of youth, which makes most young people unwilling to admit that they take pleasure in church-going.

At a summer camp, where the regular program of exercises for each day was extremely heavy, including hockey for an hour and three-quarters, track athletics or basket ball for an hour, and two different periods for swimming which were devoted largely to stunt work by the class as a whole, the girls, when they had half an hour or more between activities, instead of lying down, or at least sitting down, would immediately get up a game of tennis or baseball, or practice fencing or do some other strenuous work, even though they were evidently tired and hot from their last exercise. If anyone did lie down or rest, she was laughed at, or called an "old maid," or "no sport," so that very

few of the girls, especially the younger ones, had the courage to go their own way and ignore the comment. On one holiday when no regular program had been arranged, certain chosen ones played a very close, fast game of hockey, which lasted for about an hour. At the end of that game, which had been played in the hot sun, one of the girls was asked to play in a tennis game. She did so without any pause after the hockey match, in spite of the fact that she came limping off the field, and had played in the forward line and so had been running hard almost the entire game. The tennis lasted until the luncheon hour, and at the end of that time, someone who saw the girl said that she looked tired, and hoped that she was going to take a rest in the afternoon. The girl admitted that she was tired, but said that instead of resting, she had agreed to play in a baseball game that afternoon. When it was suggested that she had had enough exercise for one day and ought not to take any more, she answered, "But the rest do it, why shouldn't I?" And yet she was probably one of the girls who would have said that "the aim of physical education was to make people healthy." Following up the record of this girl after she had kept up a similar pace for several months, it was found that her monthly periods began coming every two weeks, and then every ten days, and she had deep circles under her eyes, and was losing flesh. When she finishes her training, if she continues to do the same way, won't she make those who see her feel that athletics for women do more harm than good? And yet, that point of view probably never occurs to her, and she labors under the delusion that she is being a "true sport" by never considering her health.

At this same camp, many of the girls were eager to learn how to swim, and two periods a day of about forty minutes each were set aside for it. The weather became very cold during two weeks, but practically every girl continued to go into the water, if not twice daily, at least once, and those who couldn't swim of course got very little exercise which might have kept them somewhat warm, but they stood around in the cold water with the wind blowing over them, occasionally making ineffectual attempts at swimming, and chattering with the cold. Their hair usually got rather wet, so after they came out of the water they let it hang about their shoulders in a damp mass, and often for two hours these girls were blue and shivering, and many of them caught severe colds, but continued to go in, in spite of them. One, who came down to the water with her suit on, giving a deep, hoarse cough, was asked how she dared go in with such a cold, and her reply was, "Oh, I don't care, I want to qualify in dives." The others, when asked why they kept on going in when there was certainly no pleasure in it, always answered that they were "bound to learn how to swim," ignoring all thought of danger to their health, in their desire to master a few

strokes. Some of the girls even went so far as to promise to pay five cents every time that they failed to go in for a morning plunge, and yet they said that it took them about half the morning to get warmed up after it. Can they ever have been told that the value of a cold bath lies in the stimulation that comes from the *reaction*, and that without it the plunge is worse than nothing? What will they be able to teach their students in these matters if they know so little about them themselves, or if they so calmly ignore the facts?

It is certainly true that a girl has to make many self-sacrifices in order to get the best results from athletics, and among other things often has to resist the temptation of playing in a match game when she is not in condition, but the good results are more than worth the sacrifices, and every girl whose health is improved by a course in physical training does a great deal towards dignifying the work and making it looked upon more favorably by the world. The sooner we students can make the feeling prevail that a girl who doesn't use any judgment in the way she goes into athletics, and says that she "can't sit still," or "hates to rest," or "won't give in to her feelings," is not being a "good sport," but is actually arguing against physical training and keeping it from growing in favor, the better it will be for the cause, and for the health of girls.

I feel that there is a great need in hygiene courses for plain statements of facts with regard to the use of common sense in physical training, which would make students not ashamed when they do care for their health, but ashamed when they consistently abuse it.

The Division of Education, Harvard University, announces two courses in play and recreation by Mr. George E. Johnson, formerly director of playgrounds, Pittsburgh, Pa. One course, Play and Recreation, will run on Saturday mornings from 10 to 12 throughout the academic year. The second course, Play and Education, will be held Tuesdays and Thursdays for the first half year. The third course, Methods of Study and Their Application, a half course throughout the year.

EXTRACTS FROM THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

July 17, 1915.

THE PRACTICAL DISINFECTION OF SWIMMING POOLS.

The danger of the transmission of disease in swimming pools is becoming realized more prominently with the growing popu-

larity of these institutions. The management of public baths in such a way as to guarantee a satisfactory degree of sanitary safety has raised a series of questions involving construction, equipment, water source and supply and personal hygiene. Calcium hypochlorite has been highly recommended for disinfecting, and has been adopted for many pools. Its efficiency as a disinfectant for the water is not doubted. Its use, however, gives rise to frequent complaints on account of the disagreeable odor attending it. This has led to much experimentation in search of an equally efficient and less offensive substitute. The difficulties here referred to are decidedly greater in connection with swimming pools than with public water supplies. For the treatment of the latter, more than two parts per million of hypochlorite are seldom necessary. Even with this small proportion, aëration of the drinking water is necessary to overcome the objectionable taste and odor. In the case of the swimming pool, this feature is aggravated by the fact that three parts of the hypochlorite per million are necessary to sterilize the water. Aëration in such cases merely serves to release the odor from the water into the enclosed room surrounding the pool. In tests conducted recently at the Taylor Gymnasium pool at Lehigh University, South Bethlehem, Pa., encouraging results have been secured by the employment of copper sulphate in place of calcium hypochlorite. The advantage of copper sulphate over calcium hypochlorite as a disinfectant for swimming pools is that it does not undergo chemical change readily. Hypochlorite owes its power to the chemical reactions involved in liberating chlorine, whereby it is converted into a useless product. Copper sulphate is not irritating to the eyes and mucous membranes, as the hypochlorite may be when used in germicidal quantities. It is cheaper and has no odor. If all other conditions were equal, says *The Journal of the American Medical Association*, the last fact alone would prove to be a great advantage.

August 21, 1915—Medical Education.

NUMBER OF MEDICAL STUDENTS.

The total number of medical students in the United States for the year ending June 30, 1915, excluding premedical, special and postgraduate students, was 14,891, a decrease of 1611 below below last year, a decrease of 2124 below 1913, a decrease of 3521 below 1912 and a decrease of 13,251 (47.1 per cent) below 1904, when 28,142, the highest number of students, were enrolled. Of the total number of students, 13,914 were in attendance at the non-sectarian (regular) colleges, 736 at the homeopathic and 241 at the eclectic colleges. The attendance at the non-sectarian colleges shows a decrease of 1524 below that of

last year, a decrease of 2005 below 1913, and a decrease of 11,016 (44.2 per cent) below 1903, when 24,930, the largest number of non-sectarian students, were enrolled. In the homeopathic colleges there was a decrease of 58 below the attendance of last year, a decrease of 113 below 1913 and a decrease of 1173 (61.4 per cent) below 1900, when 1909, the largest number of homeopathic students, were enrolled. The eclectic colleges show a decrease of 29 below the registration of last year, a decrease of 15 below 1913, and a decrease of 773 (76.2 per cent) below 1904, when 1014, the largest number of eclectic students, were enrolled.

The unusual decrease in the number of students this year, particularly in the non-sectarian colleges, according to *The Journal of the American Medical Association*, is due to the enforcement, for the first time, by thirty-nine medical colleges, of higher entrance standards—one or two years of preliminary collegiate work.

NUMBER OF MEDICAL GRADUATES.

The total number of medical graduates for the year ending June 30, 1915, was 3536, a decrease of 58 below 1914, and a decrease of 445 below 1913. The total this year is 2211 (38.8 per cent) less than in 1904, when 5747, the largest number, were graduated.

The number of graduates from the non-sectarian colleges was 3286, or 84 less than last year, and 393 less than in 1913. It is a decrease of 1904 (36.6 per cent) below 1904, when 5190, the largest number, were graduated from non-sectarian colleges. (See Table 10.) From the homeopathic colleges there were 195 graduates, or 41 more than in 1914, and 14 less than in 1913. It is a decrease of 225 (53.6 per cent) below 1903, when 420, the largest number of homeopathic physicians, were graduated. The eclectic colleges graduated 55, or 15 less than last year, and 38 less than in 1913. It is a decrease of 166 (75.1 per cent) below 1890, when 221, the largest number of eclectic physicians, were graduated.

Of the 3536 medical graduates, 858, or 24.3 per cent, hold degrees in arts or science, as compared with 22.5 per cent last year, 18.9 per cent in 1913, 17 per cent in 1912, and 15.3 per cent in 1910. Of the 3286 non-sectarian school graduates, 839, or 22.5 per cent, were reported to have baccalaureate degrees, while of the homeopathic graduates, 16, or 8.2 per cent, were so reported, and of the eclectic graduates, 3 or 5.5 per cent, were reported as holding degrees from colleges of liberal arts. Of the 858 graduates holding baccalaureate degrees, 131—the largest number—came from Illinois colleges, followed by 107 from New York, 95 from Maryland, 92 from Massachusetts and 74 from Pennsylvania. The percentage of graduates holding collegiate

degrees, says *The Journal of the American Medical Association*, is gradually increasing and will continue to increase, particularly in the non-sectarian colleges, because a larger number of medical schools are requiring college work for admission.

WOMEN IN MEDICINE.

During the past year there were 592 women studying medicine, or 39 less than last year, a decrease of 48 below 1913, and a decrease of 537 (47.6 per cent) below 1904, when 1129 women students, the largest number, were reported. The percentage of all medical students was 4, or slightly larger than last year. There were 130 women graduates this year, 9 more than last year, or 3.7 per cent of all graduates. Of all the women matriculants, 116 (19.6 per cent) were in attendance at the two medical colleges for women, while the remaining 162 (80.4 per cent) were matriculated in the 53 co-educational colleges. From the two women's colleges there were 38, or 29.2 per cent, of all women graduates, while 92, or 70.8 per cent, secured their degrees from co-educational colleges.

The number of colleges is the smallest since 1880, at which time began the rapid movement toward creating medical colleges, many of which were conducted for profit. The rapid increase in the number of colleges between 1880 and 1904 has been paralleled only by the rapid decrease since 1904. There has been a net decrease of 66 colleges since 1906, when there were 162, and when this country had about one-half of the world's supply of medical colleges. Ninety-two colleges have been closed by merger or otherwise since 1904, but in the same time, 25 new colleges were organized, leaving 95 medical colleges which still exist. The net reduction has been 67 colleges, or 41.4 per cent.

The non-sectarian (regular) colleges number 83, a decrease of 4 since last year. The homeopathic colleges number 8, or 2 less than last year, and the eclectic colleges number 4, 1 less than last year. The non-sectarian colleges show a net reduction of 47, or 36.1 per cent, since 1906, when there were 130, the largest number of non-sectarian medical colleges. The homeopathic colleges show a net decrease of 14, or 63.7 per cent, since 1901, when 22, the largest number of homeopathic colleges, were in existence. The eclectic colleges show a net reduction of 6, or 60 per cent, since 1901, when there existed 10, the largest number of eclectic colleges. These figures are taken from the annual educational number of *The Journal of the American Medical Association*.

FEWER BUT BETTER COLLEGES.

Of the 92 medical colleges which have ceased to exist since 1904, 52 were closed by merger and 40 became extinct. This

rapid diminution in the number of colleges began with the creation of the Council on Medical Education of the American Medical Association in 1905. The largest number closing in single years were 10 in 1907, when the Council's first classification of medical colleges was prepared; 13 in 1910, when the second classification was published, and 14 in 1913, when the third classification was made public.

Of the 92 medical colleges which have been closed, 48 were rated by the Council on Medical Education in Classes A and B, and 44 in Class C. Forty-three, or 95.5 per cent, of the closures of the medical colleges in Classes A and B were through merger with other colleges, while of the 44 Class C colleges which closed, only 9 (20 per cent) were through merger with other colleges. In other words, all but 5 of the colleges which became extinct had been rated in Class C by the Council on Medical Education.

Dr. Cledia D. Mosher published two interesting articles during the spring. First, "Physical Training of Women in Relation to Functional Periodicity" in the *Woman's Medical Journal* for April, 1915. Second, in *School and Society* for May 1, 1915, a description of the Schematogram—The New Method of Graphically Recording Posture and Changes in the Contours of the Body.

The *Women's Home Missionary Society* of the Methodist-Episcopal Church in Philadelphia are doing a splendid work in emphasizing the importance of home work for children and instruction in it.

FLORIDA.

Enacted into law:

Chap. 6, 829.—Providing for medical inspection of school children, under the supervision of the state board of health. This act does not apply to cities of over 5000 inhabitants where such inspection has already been established by the city board of health and is continued in accordance with the rules prescribed by the state board of health.

ILLINOIS.

S. B. 221.—Authorizing the board of school directors to establish kindergartens and to grant the use of school buildings for recreational, social and civic meetings.

S. B. 401.—Providing for physical training in all grades of the public schools.

WISCONSIN WILL HAVE A NEW FOOTBALL FIELD BY 1916.

That Wisconsin will play its football games on a new field at Camp Randall in 1916 is the hope of the athletic department. The committee on plans has taken final action and work will begin at once.

The last legislature passed an appropriation of \$20,000 for the carrying out of the work, because of the inadequate conditions of the present field. Since the north stand was commended, the athletic department has been forced to rent circus seats to accommodate the football crowds.

THE SECOND INTERNATIONAL CONFERENCE ON RACE BETTERMENT.

The Second International Conference on Race Betterment, held here August 4-8, was attended by a large number of men and women of scientific achievement. The conference discussed race decadence, the possibilities of race improvement, and the agencies of race betterment.

Luther Burbank, the plant wizard, discussed "Evolution and Variation with the Fundamental Significance of Sex." Mr. Burbank said: "Abundant, well-balanced nourishment and thorough culture of plants or animals will always produce good results in holding any species or variety up to its best hereditary possibilities, beyond which it cannot carry them, and lacking which, maximum development can never be realized. But a sharp line must always be drawn between the transient results, temporarily attained through favorable environment and the permanent results of selection of the best individuals for continuing the race. Only by constant selection of the best can any race ever be improved."

Paul B. Popenoe, editor of the *American Journal of Heredity*, in discussing "The Natural Selection of Man," declared: "There are only two ways to improve the germinal character of the race, to better it in a fundamental and enduring manner. One is to kill off the weaklings born in each generation. That is Nature's way, the old method of natural selection which we are all agreed must be supplanted. When we abandon that, we have but one conceivable alternative, and that is to adopt some means by which fewer weaklings will be born in each generation. The only hope for permanent race betterment under social control is to substitute a selective birth-rate for Nature's death-rate. That means—eugenics."

Dr. J. H. Kellogg, superintendent of the Battle Creek Sanitarium proposed that the conference institute a eugenics register which would undertake to register two classes of persons: "First, those who, on examination in relation to personal characteristics

and family pedigree, are found to measure up to eugenic standards. Second, the children born of parents whose pedigree and physical characteristics conform to the required standards. Such a registry would be the beginning of a new and glorified human race which sometime, far down in the future, will have so mastered the forces of nature that disease and degeneracy will have been eliminated. Hospitals and prisons will be no longer needed, and the golden age will have been restored as the crowning result of human achievement and obedience to biologic law."

Among the other speakers were Dr. David Starr Jordan of the Leland Stanford University; Dr. Ernest B. Hoag of the Los Angeles Juvenile Court; Edgar L. Hewett, director of the United States Bureau of Ethnology; Prof. Irving Fisher of Yale University and many others of equal prominence in sociological and scientific circles.

The conference was concluded with a Morality Masque, in which two hundred students of the University of California took part. This masque was a dramatic arraignment of disease and war.

THE NATIONAL ASSOCIATION OF TEACHERS' AGENCIES.

(Affiliated with N. E. A.)

For some years, there has been a growing desire on the part of the managers of teachers' agencies to standardize their work, thus making it possible for anyone to distinguish between agencies. The time has long gone by when an "educator" out of a job could print a few letter heads and embark in the agency business. Yet, until quite recently, such an "agency" could go before the teachers and schools as being ready for efficient work. Although "imitation is the sincerest form of flattery," such agencies have done much to discredit the work in general and to harm the good name of the business as a whole.

I venture to state that you who read this cannot tell in what company you have taken out the fire insurance upon your property and further, that you have never read your fire insurance policy. In the same blind way, teachers would say that an agency is an agency and would file their applications in anything named a teachers' agency without looking beneath the surface. They often seem to think they are beating the game if they can get membership in the cheapest agency!

In February, 1914, at the Richmond, Va., meeting of the N. E. A. (department of superintendents), was established the National Association of Teachers' Agencies. During the year, the membership grew, and at the Cincinnati meeting of the N. E. A., last February, there were elected to membership sixty Teachers' Agencies, comprising practically all such agencies doing

a reputable business with teachers only. The Association cannot admit commercial agencies or teachers' agencies which are in any way combined with commercial agencies.

Members of the National Association will print on their letter heads that they are members and it is expected that such membership will indicate their general trustworthiness. The Association has been in existence such a short time that its machinery has not yet gained full momentum, but so far as possible all agencies admitted to membership have been tested and deemed worthy. The executive committee will carefully investigate any member against whom is lodged any charges of unprofessional conduct, and if the charges are substantiated the member will be dropped from the rolls of the Association.

The ultimate aim is to have membership in the Association stand for character and quality so that any teacher, from the most humble to the highest, or any school officer, may feel safe in placing business in the hands of *any* member.

The membership of the National Association of Teachers' Agencies has for years been found in the membership of the N. E. A. Almost every agency manager has been taken from the ranks of successful educators so that it is eminently fit and proper that the great and valuable work of Teachers' Agencies should be under N. E. A. auspices. At the Cincinnati meeting, we appeared in the N. E. A. program, and gave several most excellent papers and had an audience very respectable in numbers. The National Association of Teachers' Agencies came into its own. It secured the recognition it deserved and its work was definitely cut out.

Educational journals will be furnished with a list of members of the National Association and will be asked to place in their advertising columns under suitable headings the advertisements of members so that their readers can be guided in their selection of agencies.

Everything possible will be done to keep the teachers' agency business on a high professional standing. The best interests of the school will be considered first, last and all the time. Conflicts of any sort between agencies themselves or between themselves and teachers will be adjusted by our executive committee fairly and promptly. The use of lawyers and courts to settle such differences is discouraged and even now is necessary only in very rare instances.

During the short period of its existence, the National Association has brought about a wonderful spirit of harmony and good will which augurs well for the future. Any officer of the Association will be most glad to give information about the N. A. T. A. The president is Mr. A. F. Pease, 6 Beacon St., Boston, Mass.; vice president, Joshua Richmond, St. Louis Co. Bank Bldg., St.

Louis, Mo.; secretary-treasurer, B. F. Clark, 64 E. Van Buren St., Chicago.

Albert Teachers' Agency, 623 S. Wabash Ave., Chicago. C. J. Albert, manager.

American Teachers' Agency, Myrick Bldg., Springfield, Mass. A. H. Campbell, manager.

Arkansas Teachers' Agency, Little Rock, Ark. George R. Hopkins, manager.

Boston Musical Bureau, 218 Tremont St., Boston, Mass. H. C. Lahee, manager.

Boynton-Esterly Teachers' Agency, 517 Brookman Bldg., Los Angeles, Cal. E. C. Boynton, manager.

The Brewer Teachers' Agency, 1320 Auditorium Bldg., Chicago. Orville Brewer, manager.

The Cary-Stuart Teachers' Agency, Connecticut Mutual Life Bldg., Hartford, Conn. C. Wilbur Cary, manager.

Central Bureau of Education, Paris, Ky. Miss Kate Edgar, manager.

Central Teachers' Agency, Columbus, Ohio. E. C. Rogers, manager.

Central Educational Bureau, St. Louis Co. Bank Bldg., St. Louis, Mo. Joshua Richmond, manager.

The Clark Teachers' Agency, 413 Steinway Hall, Chicago. B. F. Clark, manager.

Colorado Teachers' Agency, 1315 California St., Denver, Colo. Fred Dick, manager.

Continental Teachers' Agency, Bowling Green, Ky.

Cook's Educational Agency, 721 State Life Bldg., Indianapolis, Ind. Homer L. Cook, general manager.

Dewberry School Agency, Birmingham, Ala. R. A. Clayton, manager.

Eastern Teachers' Agency, Inc., 6 Beacon St., Boston, Mass. Theodora M. Hastings, acting manager.

Edmonds Educators' Exchange, 101 Tremont St., Boston, Mass. E. J. Edmonds, manager.

Educational Service Bureau, Inc., Law Bldg., Baltimore, Md. R. B. Shorebin, manager.

Engle Teachers' Agency, 414 Century Bldg., Minneapolis, Minn. J. D. Engle, manager.

The Fickett Teachers' Agency, 8 Beacon St., Boston, Mass. E. W. Fickett, manager.

Fisk Teachers' Agency, 2161 Shattuck Ave., Berkeley, Cal. J. B. Stearns, manager.

Fisk Teachers' Agency, 2 A Park St., Boston. E. O. Fisk, manager.

Fisk Teachers' Agency, Steger Bldg., Chicago. E. E. Olp, manager.

Fisk Teachers' Agency, Los Angeles, Cal. R. W. Coddington, manager.

Fisk Teachers' Agency, 156 Fifth Ave., N. Y. H. E. Crocker, H. M. Kelly.

Fisk Teachers' Agency, 316 Journal Bldg., Portland, Ore. Miss Jane Elliott, manager.

Foster Teachers' Agency, Third Nat'l Bank Bldg., Atlanta, Ga. A. H. Foster, manager.

J. B. Grose Educational Bureau, 120 Boylston St., Boston, Mass. J. B. Grose, manager.

Hall Teachers' Agency, Macon, Ga. B. Dixon Hall, manager.

The Hammond Teachers' Agency, Lansing, Mich. W. T. Bishop, manager.

Hazard Teachers' Agency, Kasota Bldg., Minneapolis, Minn. R. B. Hazard, manager.

The Interstate Teachers' Agency, Macheca Bldg., New Orleans. Mrs. M. C. Vickers, manager.

Interstate Teachers' Agency, 501-503 Livingstone Bldg., Rochester, N. Y. T. H. Armstrong, proprietor.

- Interstate Teachers' Bureau, Rhodes Bldg., Atlanta, Ga. F. G. Webb, manager.
- Kellogg's Teachers' Agency, 31 Union Square, New York. H. S. Kellogg, manager.
- Love Teachers' Agency, Fargo, N. D. A. A. Love, manager.
- McCullough Teachers' Agency, 839 Railway Exchange Bldg., Chicago. G. T. Palmer, manager.
- Midland School Teachers' Agency, Des Moines, Ia. C. R. Scroggie, manager.
- Minneapolis Teachers' Agency, 327 14th Ave., S. E. Minneapolis, Minn. S. J. Race, manager.
- Nat'l Commercial Teachers' Agency, 35 Ocean St., Beverly, Mass. E. E. Gaylord, manager.
- New Century Teachers' Bureau, 1420 Chestnut St., Philadelphia, Pa. G. M. Downing, proprietor.
- Northern Teachers' Agency, 12 Roberts St., Fargo, N. D. Mrs. Mattie M. Davis, manager.
- Northwest Teachers' Agency, North Yakima, Wash. T. B. Hanna, manager.
- Northwestern Teachers' Agency, Boise, Idaho. R. R. Alexander, manager.
- Ohio Valley Teachers' Agency, Mentor, Ky. A. J. Jolly, manager.
- Oswego Teachers' Agency, Oswego, N. Y. H. L. Westcott, manager.
- Parker Specialist Teachers' Agency, Madison, Wis. W. N. Parker.
- Pratt Teachers' Agency, 70 Fifth Ave., New York. W. O. Pratt, manager.
- Rocky Mt. Teachers' Agency, Empire Bldg., Denver, Colo. Wm. Ruffer, manager.
- Sabin's Educational Exchange, Manhattan Bldg., Des Moines, Ia. A. M. M. Dornon, secretary.
- Schermerhorn Teachers' Agency, 353 Fifth Ave., New York. Chas. W. Mulford, proprietor.
- School and College Bureau, 2 E. Van Buren St., Chicago. H. E. Kratz, manager.
- Sheridan Teachers' Agency, Greenwood, S. C. F. M. Sheridan, manager.
- Southern Teachers' Agency, Columbia, S. C. W. H. Jones, manager.
- Specialists' Educational Bureau, Webster Groves, St. Louis, Mo. Robert A. Grant, manager.
- The Teachers' Agency, Lemoyne Trust Bldg., Harrisburg, Pa. R. L. Myers & Co.
- The Teachers' Exchange, 120 Boylston St., Boston, Mass. T. W. White, manager.
- The Thurston Teachers' Agency, 623 S. Wabash Ave., Chicago. E. R. Nichols, manager.
- Western Reference & Bond Ass'n, 737 Scarritt Bldg., Kansas City, Mo. J. I. Billman, manager.
- Western Teachers' Agency, Milwaukee, Wis. G. Y. Gillan, manager.
- Winship Teachers' Agency, 6 Beacon St., Boston, Mass. Alvin F. Pease, manager.
- Yates-Fisher Teachers' Agency, 624 So. Michigan Ave., Chicago. Paul Yates, manager.

PHYSICAL TRAINING RECORD FOR GIRLS.

The first ten items (to, and including "Grip") are identical with the boys' card. The six exercises following are at present peculiar to the girls—though any of them might well be taken up by the boys.

The scoring system, so far as it has been worked out, is ex-

A silver button, resembling that given to the boys who secure a "Senior" rating, will be presented to those girls who secure 125 points or more.

The enthusiasm with which the girls go to their physical training lesson, and the remarkable increase in skill which they have shown in one year, would seem to indicate that the psychology of the method is correct. However, it is all so new that we welcome suggestions and criticism from anyone interested enough to offer them.

FREDERICK J. REILLY, PRINCIPAL.

Physical Training Record of _____, Born _____

[illegible]

EXPLANATORY NOTE.

Both boys and girls are rated in posture, alertness, hygiene, deep breathing, running and grip. The special exercises for girls include baseball throw (for accuracy), tennis serve, basket-

ball throw (for distance), basket-ball goals, putting in golf, driving in golf.

In posture, alertness and hygiene, pupils are marked on a basis of ten. In the other items there are certain standards which they must reach before they begin to score.

In running (potato race, about 100 yards), 27 seconds is normal and counts ten. Two points added for every second less; one point deducted for every second over.

The minimum standards for eight-year girls are as follows:

Deep breathing—minimum, $2\frac{1}{2}$ inches.

Baseball throw—minimum, 10 (possible, 25).

Tennis serve—minimum, 10 (possible, 25).

Basket-ball goals—minimum, 2 goals in 30 seconds.

Basket-ball throw—minimum, 30 feet (1 point for each 2 feet over).

Putting in golf—minimum, 1 hole out of 5.

Standards for grip exercise and for driving in golf will be developed later.

THE INTERNATIONAL Y. M. C. A. HEXATHLON ATHLETIC CONTEST.

The first annual hexathlon was a pronounced success.

Ninety-nine Associations took part. Of these, fourteen were in Class A; forty-two in Class B; forty in Class C. Three thousand four hundred and fifteen different individuals competed. One thousand eight hundred and eighty different individuals qualified in the finals.

In response to an inquiry from several Associations in Canada, the contest was opened to Canada for participation. Six Canadian Associations took advantage of the opportunity. In addition the Canadians held their own National hexathlon.

HEXATHLON RECORDS.

The best records in each event were as follows:

60-yard Potato Race.

1. A. J. Connor, Army and Navy Association, Newport, R. I., $13\frac{1}{2}$ seconds.

220-yard Potato Race.

1. W. S. Jackson, Chicago Central, Chicago, Ill., 58 seconds.

Running High Jump.

1. A. M. Bohnert, San Francisco, Cal., 5 feet, $10\frac{5}{8}$ inches.

Fence Vault.

1. George Woodman, Fort Worth, Texas, 7 feet, 6 inches.

Standing Broad Jump.

1. T. Haskins, Chicago Central, Chicago, Ill., 10 feet, 7 inches.

12 pound Shot-Put.

1. J. L. Macomber, Des Moines, Ia., 47 feet, 1 inch.

NEW YORK STATE TEACHERS' ASSOCIATION.

This Association, at their last meeting in Albany, organized the Medical Inspectors and Physical Educators Association of the City of New York as a suggestion of the State Teachers' Association, the purpose being to develop a broader public interest in school hygiene, standardize medical inspection, develop an interest in clinics for school children, increase the effectiveness of school nursing and aid in the development of physical education. The membership fee is \$1.00 and should be sent to Edward F. Brown, Secretary-Treasurer, 105 E. 22d Street, New York City.

OPINION ON SEX EDUCATION.

The American Social Hygiene Association, 105 W. 40th Street, New York City, has published an attractive circular giving the ideas of leaders like Dr. Morrow, ex-President Eliot of Harvard and others on this subject.

RACE SUICIDE IN THE UNITED STATES.

SOME FACTS FROM AMERICAN GENETIC ASSOCIATION, 511
ELEVENTH STREET, WASHINGTON, D. C.; PAUL
POPENOE, EDITOR.

Washington, D. C.—Women's colleges are one of the most dangerous factors hastening race suicide in the United States, according to Robert J. Sprague, professor of economics and sociology in the Massachusetts Agricultural College at Amherst, who makes a statistical study of the problem in today's issue of the *Journal of Heredity*, organ of the American Genetic Association, a society officered largely by scientists of the Federal Department of Agriculture.

Professor Sprague recalls that the old American stock is rapidly dying out and being replaced by immigrants in New England, because its birth-rate is so low. Every married woman in it should bring to maturity at least three children, he calculates, unless the race is to go backward. The college girls, who represent a valuable class, do much worse than this.

In the early days of Mount Holyoke, the oldest great women's college, 85 per cent of the graduates married, but nowadays only

two-fifths of them do so, and these bear less than two children apiece. The graduates of Mount Holyoke, as a whole, do not even reproduce their own number at present, less than one child being born for each graduate.

Only one-third of the Bryn Mawr graduates have married, and they have borne one-third of a child each, speaking statistically and not counting graduates of the last fifteen years, who still have time to marry and produce families.

More than one-half of the Vassar graduates are unmarried, and those who do marry bear less than two children. A third of the graduates teach before marrying, and these have the lowest birth-rate.

Only a third of the girls who have graduated at Wellesley during the last quarter century have married, and they have borne only one child apiece. Even when the higher marriage and birth-rate of early graduates is taken into account, the Wellesley girls have given to the world only a third of a child for each graduate.

In such figures as these, Professor Sprague sees the fate of the old white race in America plainly written. To make the women's colleges help in saving the race, instead of hastening its death, he suggests changes in public sentiment, legislation and taxation; and particularly a change in the kind of education given to college women. "Women college graduates are not greatly sought after as mates," he declares, because they are not properly prepared for the task of making a home. One of the reasons for this is the preponderance of old maids on college faculties—in one such institution there are 114 professors and instructors, of whom 100 are women, of whom only two have ever married. With such teachers, the college girls "are not prizes in the matter of efficiency in domestic life." Until public sentiment reforms the women's colleges, Professor Sprague thinks that "our race suicide statistics will be portentous."

PHYSICAL REQUIREMENTS FOR ADMISSION TO COLUMBIA UNIVERSITY.

The only physical requirement at present for admission to Columbia University is the presenting of two health blanks; one filled by the student and the other by the family physician. These blanks go to Dr. McCastline, the university physician, who thereby secures information concerning students having organic disease or impaired health. Theoretically, Dr. McCastline could recommend to the Committee on Admissions to refuse admission to a student whose physical condition is such that he could not successfully pursue a college course. This plan was put into operation last year but no students have been excluded for that reason and it is not likely that any will be excluded for that

reason alone. However, this requirement is justified for two reasons: First, it emphasizes the importance of good health, and second, it gives the university physician advance information that is helpful in his work of supervising the students' health.

HEALTH EXAMINATION FORM—A.

This form is a part of the requirement for admission to Columbia University and should be filed with the general application for admission. The purpose of this examination is to enable the University authorities to assist the students to maintain a high degree of efficiency by proper adjustment, as early as possible, to the mental, physical and social activities of the College life.

Name
Home address
Date of birth
Present state of health
State what illnesses of more than one week's duration you have had during the past two years
What infectious or contagious diseases have you had, and at what ages?
Are you subject to headaches?
Have you ever had any trouble with your eyes?
Do you wear glasses?
Have you ever had any diseases of the ear?
Is your hearing normal?
Are you subject to attacks of sore throat? Colds? Coughs?
Are you subject to digestive disturbances?
Have you ever had rheumatism?
Have you ever had any nervous diseases?
Are you subject to fainting spells?
Have you ever had typhoid fever? Malaria?
State any surgical operations which you have had, with dates
State date of last successful vaccination against smallpox
Have you ever been vaccinated against typhoid fever?
Do you plan to do any work for self-support during your college course?
Do you plan to do any studying or work of any kind aside from the work required for your degree?

HEALTH EXAMINATION FORM—B.

This blank is to be filled out by a physician and sent by him directly to Dr. William H. McCastline, University Medical Officer Columbia University, New York City. Note.*

To the University Medical Officer:

I have this day given M
a careful physical examination and find in health
The lungs are
There are signs of pulmonary tuberculosis
The heart is
The abdominal viscera are Hernia
The skin is
The condition of the nose and throat is
The condition of the nervous system is

* NOTE.—In answering questions, please use the term NEGATIVE where the condition is normal rather than use a dash or leave the space blank.

Are there symptoms of eye-strain?

Are there orthopedic diseases or defects present?

The posture is

Are there any abnormalities from injuries?

Do you consider the applicant in a state of health to stand the test of College work?

As a result of the foregoing examination or previous knowledge of the applicant's health, have you any suggestions that would help the University Medical Officer to assist the applicant to develop and to maintain a high standard of physical efficiency?

Date

Signature

M. D.

Address

COUNTRY SCHOOL SANITATION.

SUPT. FRANCIS G. BLAIR, OF ILLINOIS, IN ILLINOIS MEDICAL JOURNAL AND BULLETIN, 1915, NO. 5: "THE HEALTH OF SCHOOL CHILDREN."

The law of Illinois makes the superintendent of public instruction the supervisor of all the common and public schools of Illinois. It makes him the adviser of school officers. On this legal authority the superintendent of public instruction has appointed two country school supervisors who are working to better the physical and instructional conditions of the one-room country schools. Two diplomas are prepared by the State department, one for a standard one-room school and the other for a superior one-room school. The standard diploma is awarded to any school which meets a certain minimum requirement. This minimum standard requirement as it relates to the physical and sanitary conditions is as follows:

Yard and outbuildings:

1. Ample playground.
2. Good approaches to the house.
3. Two well-kept, widely separated outhouses.
4. Convenient fuel houses.

The schoolhouse:

1. House well built, in good repair, and painted.
2. Good foundation.
3. Well lighted.
4. Attractive interior decorations.
5. Good blackboards—some suitable for small children.
6. Heated with jacketed stove in corner, or a room heater and ventilator in corner, or basement furnace which brings clean air in through the furnace and removes foul air from the room.
7. Floor and interior clean and tidy.
8. Desks suitable for children of all ages, properly placed.
9. Sanitary water supply.

In order to secure the superior diploma the following additional requirements must be met:

Grounds :

1. Playgrounds at least one-half acre and kept in good condition.
2. Some trees and shrubs.
3. Well or cistern and sanitary drinking appliances.

House :

1. Separate cloakrooms for boys and girls.
2. Lighted from one side or from one side and the rear.
3. Heated with basement or room furnace, which brings in pure and removes foul air.

BOOK REVIEWS.

THE RATIONAL SEX LIFE FOR MEN. By *M. J. Exner, M. D.*
Published by *Association Press*, 1914. 95 pp. Price 50
cents.

This book represents a very careful study of the problem of the sexual life of college men. The book presents its material from the standpoint of character building. It is a sane treatment of the situation. It does not give, as some books do, the emotional side undue significance. It is a book of general interest to the general public and of particular interest to teachers in educational institutions.

BLOOD PRESSURE READINGS IN PRACTICE. By *R. E. Mercer, M. D.* Published by *A. Kuhlman & Company*, Detroit, Mich., 1913. 79 pp. Price 75 cents.

This book presents an attractive monograph on the subject of blood-pressure tests, the value of blood-pressure readings, and normal blood pressure with conditions which bring variation. The book also tests blood pressure under diseased conditions and presents two chapters on the discussion of instruments and the technique of their use. The section of functional tests is very brief, discussing the matter in very general terms. Unfortunately it uses an old test of Dr. Crampton's rather than suggesting to the readers a later test. For example, Dr. Crampton, in the *New York Medical Journal* for November 8, 1913, published a new percentage scale, which evidently the author did not see. This scale is an improvement on his earlier one.

BLOOD PRESSURE, ITS CLINICAL APPLICATIONS. By *George William Norris, A. B., M. D.* Published by *Lea & Febiger*, 1914. 372 pp. Price \$3.

This is a scholarly book on the clinical applications in blood pressure. The larger proportion of the book is devoted to diseased conditions, although the first four chapters will be of general interest to examiners who are making functional tests of either men or women who are entirely healthy. The book illustrates the need of many more careful observations along the functional side. The chapter on functional efficiency of the circulation brings together some splendid material. It is unfortunate that a book published at this date should have the old Crampton functional test rather than his newer test.

CITY OF ALBANY. Syllabus and Outlines of Physical Training for Public Schools. Arranged by *Lawrence S. Hill*, 1914. 128 pp. Price \$1.

This monograph gives the syllabus and outlines of physical training as given to the Albany elementary and high school pupils. It includes general suggestions, gymnastic lessons, plays, games and dancing. The lessons for the elementary schools are thoroughly worked out. The lessons for the high school girls and boys are presented largely in outline.

THE NERVOUS SYSTEM AND ITS CONSERVATION. By Percy G. Stiles, *Instructor in Physiology in Harvard University; Instructor in Physiology and Personal Hygiene in the Massachusetts Institute of Technology.* 12mo. 229 pp. Illustrated. W. B. Saunders Company, 1914. Cloth, \$1.25.

This book attempts to connect the anatomy and physiology of the nervous system with its hygiene. The author has succeeded in making this connection in splendid shape with many practical illustrations given. Students of physical education will be particularly interested in chapters 8, 9, 17 and 18. Chapter 8 takes up the neuromuscular system in relation to neuromuscular fatigue. The author discusses the relationship of the muscle, fiber, the motor end-plate, the motor perikaryon and fatigue of the synapses in their relation to the problem of fatigue. Chapter 9 treats of the autonomic nervous system. This section of the nervous system in its relation to control of plain muscle, either in arteries or intestinal walls, is indirectly related to the skeletal muscles. The author presents this material largely under its relationship to vasomotor control. Chapter 17 discusses the hygiene of neurasthenia in ways that will be helpful to physical training teachers who have to deal with this type of individual. The last chapter is devoted to matters of general hygiene. The author summarizes these: (1) A sound inheritance, (2) successful nutrition, (3) suitably varied activity in all departments of organization, (4) rest properly adjusted to the foregoing, and (5) a wholesome environment. This book should be in the hands of students of physical education. It will be of general interest to any students of the hygienic problems of our present civilization.

THE PSYCHOLOGICAL METHODS OF TESTING INTELLIGENCE. By W. Stern. Translated by Dr. G. M. Whipple. Published by Warwick & York, Inc., 1914. 160 pp. Price \$1.25.

In this monograph Dr. Stern has not merely sought to prepare a general summary of the methods and results of intelligence testing, but has also offered constructive criticisms of the methods, has made proposals for their modification and development, and has discussed in some detail the results that accrue to the pedagogy of the normal and of the subnormal child. The general plan of the book includes an introductory section upon the nature of intelligence and the problem set by attempting to measure it and an exposition of tests of intelligence under three main divisions: (a) Single tests and series of tests, (b) the principle of age-graduation (Binet-Simon tests), and (c) correlation and estimation methods. The treatment is designed to appeal to a wide circle of readers outside the psychological profession, especially to teachers of normal and of backward children, to school administrative authorities, to school physicians and to specialists in nervous and in children's diseases. The book will convince these readers of the great importance and fruitfulness of the psychologist's methods and at the same time show them the difficulties in the work and the gaps in its present status so plainly as to prevent over-hasty attempts at practical application.

THE COMPLETE BOXER. By J. G. Bohnn Lynch. Publishers, Frederick A. Stokes Company, New York, 1914. 238 pp. \$1.60 net. Illustrated.

Probably no book published on boxing in recent years can be considered to be more complete than this book written by a famous English university trainer. It is prefaced by a highly commendatory article written by the Earl of Lonsdale.

Chapters are devoted to explaining the Cardinal Blows, Defence, Counter Blows, In-Fighting, Training, Knock-Out Blows, Competitions, Actual Self-Defence, Professional Boxing, Refereeing and Club Organization. A special article on English Army Boxing has been written by J. H. W. Knight Bruce.

An appendix contains the rules of the Amateur Association, the Royal Navy and Army Association, the National Sporting Club, and for Public School Boxing.—*L. C. S.*

ON DREAMS. By *Sigmund Freud*. English translation by *M. D. Eder*. Introduction by *W. L. Mackenzie Rebman Company*, New York, 1914. 110 pp. Price \$1.

This is an expurgated edition for the general reader of Freud's famous "Die Traumdeutung," 1911, now available in English as well as this edition. It is conceivable, of course, that here and there at long intervals a party of adolescent girls might wish to study dream-psychology unhampered by hot flashes in their faces, but in general, Freudian psychopathology without the sex-character is more than dehamletized "Hamlet." It should not be so, of course, for the basal principles of Freud's system are undoubtedly always acting in all aspects of the mind more or less; it has chanced that Freud has become obsessed with the most obvious illustrations (in the sexual instinct) of the principle; but this narrowness will pass.

This little volume is a profitable one at a dollar (save to him to whom its contents are wholly new), but it is well printed (in England) on thick paper. It has no index! As a Freudian primer it is unexcelled.—*G. V. N. D.*

NEW NERVES FOR OLD. By *Arthur A. Carey*. Published by *Little, Brown & Co.*, Boston, 1914. 271 pp. Price \$1.

The title of this book is distinctly misleading, but when one gets its real range and its elevation, so to say, it undoubtedly serves a purpose for many readers. The volume is gratefully inscribed (as obviously it truly ought to be!) to the renowned Annie Payson Call. It deals with: Body, Mind and Spirit; The Training of the Will; Non-Resistance; Balance; The Power of Habit; Appearances and Reality (with seemingly little direct relationship to F. H. Bradley's famous treatise of similar title); Stagnation and Life; Nerves and Civilization; Social Pride and Contempt; Chastity; Spiritual Manhood; The Spiritual World; Genuine Love; Summing Up; and an Appendix. These are the chapter headings and, the book being an inexpensive one, clearly the reader gets his money's worth, even if his nerves are not renewed.

The volume has no index, but otherwise is worthy of its well-known publishers.—*G. V. N. D.*

THE QUESTION OF ALCOHOL. By *E. H. Williams*, *M. D.* Published by the *Goodhue Company*, New York, 1914. 16mo. 120 pp. Price 75 cents.

This booklet consists of five chapters, which are reprints of separate articles which have appeared in different publications.

The chapter on The Drug Habit Menace deals with the phenomenal increase in the use of morphine and cocaine, especially throughout the Southern states, following the legislation to abolish the saloon in the hope that thereby the poorer classes would not be able to secure intoxicants.

Temperance in the public schools deals with the danger of unscientific statements, such as it is claimed were common in text-books provided by

the W. C. T. U., after said organization had secured legislation requiring the study of "scientific temperance" as an essential part of the school curriculum.

In the chapter dealing with Relation of Medicine to the Liquor Question, the author concludes that in spite of the remarkable advance of prohibitive legislation, there is more than twice the amount of whiskey consumed in the United States than was seventeen years ago, and further, that more liquor per capita is consumed now than ever before. This leads the author to his final chapter on the solution of the problem, in which he recommends:

1. Rational treatment of the dipsomaniac, that is, segregation and scientific individual attention, rather than jail sentences.
2. Protection of the adolescent, probably by developing self-control, not alone by making it difficult for him to secure liquor.
3. Rigid control of saloons and provision of substitutes in which the social craving will be gratified; for example, clubs, gymnasiums, social centers, etc.—*G. B. A.*

HOW TO PLAY BASEBALL. A Manual for Boys. By *John J. McGraw*. Published by *Harper Brothers*, New York and London. 12mo. 151 pp. 1914. 60 cents.

This manual for boys by John J. McGraw, manager of the champion Giants, is one of the best baseball manuals yet published. McGraw has covered the elementary fundamentals of baseball in a masterly way.

The chapter on Pitching is to be especially commended. Any boy and even many league players will find much of value in the text. The book is richly illustrated with thirty-two cuts from photographs of big league stars in actual play.

Chapters are found on the Catcher, Pitcher, First, Second and Third Base, Short-stop, Fielders, Batting, Base Running and Team Work.—*E. B.*

BEHAVIOR: AN INTRODUCTION TO COMPARATIVE PSYCHOLOGY. By *John B. Watson*, Professor of Psychology in the Johns Hopkins University. *Henry Holt & Company*, New York, 1914. XIII, 439 pp. \$1.75.

This is a valuable, well-illustrated text-book of comparative psychology and biology and has within its range, therefore, many things well worth while to whatever physical educators care to note and to apply them. It is an elaboration of the eight lectures given at Columbia during the winter of 1913, and the author hopes "that the volume will contribute something towards the introduction of more careful methods in the study of behavior (every physical educator is a practitioner of applied behavior), and serve to mark off the study from other sciences."

The chapter headings by themselves almost "review" the book: Psychology and Behavior (wherein is set forth the sanctions of the preference of the term behavior to psychology); Some Problems Enumerated; Apparatus and Methods; Observations and Experimental Studies upon Instinct; Concerning the Origin of Instincts; The Experimental Study of Habit Formation; Fixation of Arcs in Habit; The Abridgement of the Learning Process; The Limits of Training in Animals (including children); Man and Beast; Visions; Auditory and Related Functions; Smell, Taste, and the common "Chemical Sense"; Cutaneous Organic, and Kinæsthetic Senses. There are excellent bibliographies of considerable extent, and there is a good index. Obviously there is more here, set forth as it is by America's leading behaviorist, for physical education than is present in most of the books bought by those members of the American

Physical Education Association who are forever looking for "practical" information in predigested, dextrinized form—the first step to a permanent mental marasmus.—*G. V. N. D.*

PSYCHOLOGY, GENERAL AND APPLIED. By *Hugo Münsterberg*.
Published by *D. Appleton & Company*, New York, 1914.
XIV, 487 pp. \$1.75.

This book (the twenty-first published by the very well-known head psychologist at Harvard in the last sixteen years) is perhaps the most inclusive untechnical discussion of the present status of general psychology that is now available. In no sense a text-book, nor pretending to be, it describes for those of leisure who would be up to date in their thinking the present status and ambitions of this the fundamental science.

About half or rather more of the book is occupied by discussion of descriptive psychology proper. Then follows "purposive psychology," metaphysical and ethical. The latter part of the work devotes itself to explaining what the science hopes to do in the direct advancement of life in social communities: "applied psychology." Despite the commendable and essential importance of these aspirations, the unprejudiced observer has apparently yet to think of this aspect of the science as applicable psychology rather than as so far actually applied; for, ever including the valuable pioneer work of the author, the practical results so far are discouraging, at least to any who would see immediate reform in the ancient traditional methods. It is "a long, long way" apparently to this important line of advance, and further yet to its consummate goal.

This book is recommended to all students and practitioners of physical education, some of whom can make numerous important applications for themselves.—*G. V. N. D.*

PSYCHOLOGY IN DAILY LIFE. By *Carl Emil Seashore, Professor of Psychology in the State University of Iowa*. *D. Appleton & Company*, New York, 1914. XVIII, 226 pp. Illustrated.

"This volume well represents the general purpose of the Conduct of Mind series, which is to present for the intelligent reader the several aspects of mental affairs which are involved in the regulation of practical interests.

"The volume comprises a selection of illustrative material with their interpretation and may well serve as an introduction to the study of psychology. It proceeds by selecting a few general topics rich in application and about which a considerable range of mental principles may be grouped. The several chapters deal with topics such as Play, The Law in Illusion, Mental Measurement, Mental Health and Mental Efficiency. The illustrations are in each case given a sufficient setting so that they become typical of the problems of psychology and at once suggest how competently the issues of our daily life are conditioned by the psychological basis. The work is free from technical terms and presents a fresh and original arrangement of the material characteristics of modern interest in the laws of the mind."

The book, strangely enough, lacks an index.—*G. V. N. D.*

MESSAGE: ITS PRINCIPLES AND TECHNIC. By *Max Böehm*.
Edited by *Dr. C. S. Painter*. Published by *W. B. Saunders Co.* 8vo. 91 pp. Price \$1.75.

As a part of the present-day tendency away from excessive medication, comes an increase of interest in other means of health preservation and of

therapeutic treatment, so the appearance of an American edition of Dr. Böehm's "Treatment on Massage" is timely. It is so reasonable in its pretensions, undertaking to cover only a limited portion of the field, and so simple in its presentation that it would be an important factor in bringing together the regular practitioners of medicine, and those who advocate the therapeutic use of exercise and massage. More and more physicians are prescribing and supervising massage treatment for patients suffering from a fairly wide range of difficulties.

After a very simple explanation of the different technical procedures and their application, the author proceeds to a detailed consideration of the treatment of joints, discussing the wrist, elbow, shoulder, ankle and knee. Then follows a more thorough delineation of the procedures relating to the various muscles of the arm, shoulder, legs, back and neck. Massage of the skin and nerves is given very elementary treatment, and the application of massage to the abdomen is outlined in rather a superficial way. An abundance of illustrations, in the main good, aid materially in an understanding of the technique.—*G. B. A.*

EDUCATION THROUGH PLAY. By *H. S. Curtis*. Published by *Macmillan Co.*, New York City, 1915. 12mo. 359 pp.
Price —

Dr. Curtis has been definitely interested in and identified with play and playgrounds for more than 15 years. He has been a thorough student of the philosophy of play, as well as a successful administrator of playgrounds. He has personally investigated English and German, but particularly American systems, and knows intimately from personal experience some of the most important positions in the United States. He has drawn from his experience as well as from the widely scattered literature, to produce this handbook.

Beginning with the various theoretical explanations and use of play, including those of Schiller and Groos, he proceeds to the consideration of play as a form of physical training, showing its relation to intellectual development and to the formation of habits and character, the latter a phase only beginning to be understood by play leaders, and almost entirely neglected by educators generally.

Details are given of the practices, equipment, and teacher training in the European and American systems. In case of the latter he specifies such items as surfacing, fencing, shade, apparatus and ground plans. A chapter is devoted to play and rural schools, and another to the Gary System, which on account of its economy of equipment and time is serving as a model for many cities.

The place of play in the school curriculum, and the various forms of play suitable for different grades, is one of the best chapters in the book, while his treatment of athletics in secondary schools and colleges will prove of interest to even the experts in these institutions.

A strong plea is made for the place of play in summer schools and a practical program for the same is suggested. Summer playgrounds and school camps are well outlined, and the treatment of the school as a social center is fairly complete.

A brief chapter is given to the rules in training of play teachers, and an appendix contains rules for twenty-five games, shown by experience to be most popular and suitable for playgrounds. The text is fairly well illustrated, mostly with pictures of groups in action, and will be particularly desirable for references not only on account of its conciseness, but because of the bibliography appended to the treatment of each of the main topics. According to the preface, the author is, in the near future, to publish a second volume on the practical conduct of play. It is intended to be a handbook for the administration of play activities. We await

with eager anticipation the appearance of this promised companion volume.—*G. B. A.*

PRACTICAL SANITATION. By *F. Gardner, M. D., and James Parsons Simonds, B. A., M. D.* Published by *C. V. Mosby Co., St. Louis, 1914.* 8vo. 403 pp. Price —

Every intelligent citizen is conversant with the splendid work of the United States Public Health Service. On the west coast it has at an immense expense practically stamped out the bubonic plague. From the Gulf states it has almost driven out yellow fever, and through the South generally has performed a signal service against hookworm and trachoma, and in one sense the Panama Canal is the monument of the triumph of sanitation over the ravages of mosquito-bearing disease. State and municipal boards of health are realizing their responsibility to the public by the publication and generous distribution of popular and scientific information concerning health, as well as through the creation of a new official charged with the supervision of the health of the public.

There is, therefore, urgent need at the present for texts which aim to give "Within the covers of a simple, moderate-priced volume a plain, non-technical explanation of the duties of the health officer."

This publication is a splendid and convenient reference book. The material is well selected and well arranged, and the index is unusually complete. Part I on Epidemiology outlines the nature of infection, the management of epidemics, the place of isolation, quarantine and disinfection. It discusses at length skin diseases and animal parasites, and gives well-chosen summaries concerning each of the following groups of infective germs; typhoid, diphtheria, plague, yellow fever, tuberculosis, typhus, meningitis, venereal, ringworm and conjunctivitis. Part II on General Sanitation is of special value in connection with vital statistics, inspection of schools, factories and workshops, of food, milk, water, etc. Good chapters are offered on campaigns against flies, rats and mosquitoes. Part III has to do with the collection and laboratory identification of pathological material, and the appendix gives schedules for sanitary surveys, etc. We note the absence of detailed consideration of hotels, swimming pools, public baths, etc., which are of increasing interest from the standpoint of public hygiene.—*G. B. A.*

THE HUMAN BODY AND ITS ENEMIES. By *Carl Hartman and Lewis Bradley Bibb.* Published by the *World Book Co., Yonkers, N. Y.* 358 pp. Price 65 cents.

This is really the first "book of health" in a series planned by the Department of Education for the state of Texas, and is in consequence intended as a text for the lower grades. It is based upon the fundamental assumption that the essential principle of hygiene is cleanliness, and that the human race has an instinctive horror of the unclean, therefore, the emphasis is placed upon the necessity of the precaution advocated for the prevention and removal of uncleanness. It includes treatment of the essentials of germ diseases and their prevention, of the attitude of the mind, of the wonderful natural defenses of the human body, and includes just enough of anatomy and physiology to render the hygienic aspect intelligent. It is an eminently well-compiled text for either country or city use.—*G. B. A.*

SANITARY AND APPLIED CHEMISTRY. By *E. H. S. Bailey.* Published by *Macmillan Co.* 12mo. 345 pp. Price \$1.50.

This is the third edition of this popular text, which is characterized by a commendable simplicity of language and a well-selected series of

experiments, performable with comparatively little and inexpensive apparatus. These experiments are distributed throughout the text instead of being grouped in an appendix.

The first part is devoted to water, air, heating, lighting, ventilation, etc., and includes those practical problems with which we come in contact in the ordinary course of life.

The second part is a discussion of foods and beverages, in which sections no attempt is made to outline the work which properly belongs to the trained microscopist or analytical chemist, but it enumerates many adulterants and simpler tests for them are given in the experiments.

It is a satisfactory text for elementary courses such as are found in high schools, and might be used with acceptance in an ordinary college course.—*G. B. A.*

RACE IMPROVEMENT OR EUGENICS. By *La Reine Helen Baker*.

Published by *Dodd, Mead & Co.* 4 x 7. 137 pp. Price \$1.

The chief purpose of this book is to interest the American people in the "vitally important and sadly neglected subject—eugenics." The author deplores the fact that Anglo Saxons regard sex relations as so sacrosanct that to mention them is regarded as immodest. A strong claim is made for the importance of heredity as compared with environment. She urges the right of every child for a fair chance, so that even the legitimization of illegitimate children is regarded as a duty of the state.

To make marriage attractive the state should increase the facilities for unmaking it. Certain diseases, felony or incurable laziness, should be sufficient grounds for divorce. The feminist method claimed by the author to be irresistible, is interpreted as in accord with eugenic principles. One of her arguments is that the state should assume the position of parent to each citizen and that children should be warranted efficient parents or, failing these, a foster parent acknowledged by the state.

The book is forcibly written, though perhaps somewhat extreme in the views advanced.—*G. B. A.*

BOOKS RECEIVED.

NEWCOMB COLLEGE BASKET BALL GUIDE FOR WOMEN, COLLEGIATE RULES. Edited by *Clara Gregory Baer, H. Sophie Newcomb Memorial College for Women, The Tulane University of Louisiana, New Orleans, La.* Price 10 cents.

WRITTEN THOUGHTS, WAPA I, CAMP FIRE GIRLS AND THE NEW RELATION OF WOMEN TO THE WORLD. WAPA II, THE DESIRES OF AMERICAN GIRLS. *Camp Fire Girls.* Price 10 cents each.

LOVE AND HEALTH, THE PROBLEM OF BETTER BREEDING FOR THE HUMAN FAMILY. By *Matteo Teresi.* Published by *The Shakespeare Press,* 1914. Paper, 50 cents; cloth, \$1.

EIGHT PLAYS FOR THE SCHOOL. By *Frances Helen Harris.* Published by *E. P. Dutton & Company.* Price 60 cents.

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JAMES HUFF McCURDY, M.D., Editor

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AMERICAN PHYSICAL EDUCATION REVIEW

JAMES HUFF MCCURDY, M. D., *Editor*

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MORAL AND SOCIAL VALUES OF PHYSICAL EDUCATION IN THE SECONDARY SCHOOLS.*

FRANKLIN W. JOHNSON, PRINCIPAL UNIVERSITY HIGH SCHOOL,
UNIVERSITY OF CHICAGO, CHICAGO, ILL.

The writer of this paper is not trained in the theory and practice of physical education. An experience of many years as principal of public and private secondary schools, however, has brought me into close contact with the moral and social problems of secondary-school life, in which athletics play a most important part. In the light of this experience, I shall discuss, in as specific a manner as possible, first, some unfortunate conditions and tendencies which the present athletic situation reveals, and second, some more hopeful tendencies which, if made generally effective, will give to this branch of physical education a far more important place in the education of the morally as well as physically efficient men and women of the coming generation than it can do under present conditions.

No one has had to do with interschool athletics who does not know that dishonest practices are occasionally employed to secure a supposed advantage. This dishonesty may sometimes be traced to the students, again to the coach, the principal, or other member of the faculty, sometimes it is shared by all. The following instances will furnish familiar types. Not long ago in the public-school league of one of our largest cities a controversy arose over the age of one of the players. A comparison of the records which he had made in two schools revealed the remarkable fact that between the first high-school record and the last he had in some manner lost a year from his life. There were presented in the case various documents including statements from the boy's

* Read at the Third Annual Convention of the Middle West Society of Physical Education and Hygiene, Chicago, April 30, 1915.

parents and family physician to show that the first record was an error, but after long and careful investigation the boy was declared over age and was debarred from playing. Some years ago the writer knew of the case of a young instructor in a private school who was given charge of a baseball team on a trip to another school, who actually played on the team, assuming the name of one of the boys. The youth of the teacher, together with the fact that as coach of the team he felt an unusual desire for its success, may be given as explanation but not as excuse for his conduct. The same could not be suggested to cover the case which came to my attention not long ago. A boy with his father came to my office to arrange for his entrance to the school. In the course of the interview the conversation led to his life in the school from which he came, a school whose published announcements lay claim to consideration because of the strong moral influence exerted upon its boys. The boy referred with pride to the fine record of their football team, saying that they had never lost a game on the home ground, although on one occasion it had looked as if they would lose the game when their principal, whom he called by name, had put into the game under an assumed name a former graduate of the school, of great fame on the gridiron. His skill at the game led to the discovery of his identity and his removal from the game. I was much struck by the fact that this incident seemed in no remotest way the cause for the contemplated change of schools in the mind either of the father or of the son.

At an important interscholastic football game last fall, a person who sat on the bench beside the coach of one of the teams told me that repeatedly during the progress of the game the water boy carried messages from the coach to the players on the field. This man, who was a regular member of the teaching staff of the school, did not hesitate to violate the rules of the game and to cause a student to share in his unsportsmanlike and dishonest conduct.

Closely related to this is the practice of the coach who directs the players on a baseball team by signals from the bench. While there is nothing dishonest in this practice, as it violates no rule of the game, it certainly is unsportsmanlike. The fact that in certain colleges the baseball coaches sit in the grandstand is a hopeful sign that our standards of collegiate sportsmanship are on the rise.

However demoralizing some of these conditions in public or private schools are, they can hardly equal those existing in some Sunday school athletic leagues organized for the purpose of promoting an interest in this department of church work. In public school leagues more or less responsible control is exercised by authorities, but in the case of Sunday school athletic competition

this is largely lacking. In a certain city the rivalry between schools has led to a great influx of lusty boys for the two Sundays of attendance required by the rules of the league prior to the decisive contests. In this respect the effect is like that of the approaching picnic of former days. I noticed one morning in the list of winners of the events in the annual Sunday school track meet the names of a Jewish and a Catholic boy in my own high school. Calling them to my office, I asked them when they had joined the —— church. With sheepish smiles they said that they had not joined the church but had entered the Sunday school two weeks before to help win the championship of the city. When asked if they thought this was in accordance with the standards of sportsmanship which we had been accustomed to maintain, they said, "No, we're just plain ringers, but we thought as it was a Sunday school it would be all right." Another case, reported on good authority, was of a boy who added substantially to the victory of a Sunday school team who had never been in the school at all but had attended the required two Sundays by proxy, having sent another boy who registered under his name.

A few weeks ago in a church in this vicinity, a basket ball game between two Sunday school teams was stopped because of the profanity of some of the players on the floor, but not in time to save the official from a blow from a Bible hurled from the gallery by an enthusiastic supporter of one of the teams.

Another deplorable tendency, not confined to athletics, but frequently associated with it, is most often spoken of by the participants as "swiping," a genial euphemism which covers a wide variety of offenses from the appropriation of street signs, silver spoons and other similar souvenirs intended for decorative purposes to the theft of articles later turned into cash at the pawnbroker's. Such souvenirs as silverware, towels, and even bedding from hotels and dining cars are frequently considered fair plunder by boys while on athletic trips. The football team of a well-known school on arriving at its destination was obliged, in order to avoid arrest, to submit to search and to surrender a motley collection of plunder "swiped" from the dining car *en route*. A few years ago, on one of the long trips which are sometimes taken at the season's end to determine which of two teams representing regions far apart is superior, a certain high school team secured not only athletic fame but wide notoriety as well by reason of the wholesale plunder gathered along its route.

Last autumn there came to my knowledge an amazing illustration of this practice which has since gained publicity through no one connected with the incident in my own school. For several weeks the football squad of a certain school came once each week to scrimmage with our team on our field. As our guests they were given the privileges of our gymnasium dressing rooms

and baths. Here they were provided with lockers to secure their property from any possible loss. Reports that lockers had been broken open and their contents stolen kept coming to me from time to time. After a few weeks it was noticed that these losses were always reported the morning after the entertainment of our guests. The facts were reported to the principal of the visiting team who secured a confession that all the boys except the captain and manager had been guilty of stealing. A careful inventory of articles stolen made up a total of \$150 worth of athletic goods and a gold watch. All the articles were finally restored except sundry items to the value of \$65 which were paid for in cash. I spent considerable time in my office in an effort, which I fear was not wholly successful, to convince these boys that they had committed a serious offense. Their only explanation was that they had earlier in the season suffered the loss of similar athletic materials in a visit to another school and were trying to make good their loss. The highly pragmatic theory of morals by which they justified their conduct was that everybody does it and in the end all come out even, though some of the articles may not be a good fit. The principal of the school involved is reported in the public press to have said in explanation that "stealing goes with athletics and has to be considered a part of the athletic program." My opinion is that he did not say this but that it represents the cynical conclusion of the reporter who wrote the story. Whosoever opinion it is, it gives us abundant food for thought.

I might go on citing similar instances of dishonest and unsportsmanlike conduct in connection with school athletics, but I shall even now find it difficult to convince you that I am not a pessimistic opponent of all scholastic sports. The fact is quite the contrary, for I am an optimistic supporter of every suitable form of athletic sport and desire nothing more earnestly than that all boys in our American secondary schools should have the opportunity to derive the moral as well as physical benefit which participation in these sports, under proper conditions, may give. But there is nothing to be gained by closing our eyes to facts. On the contrary, a recognition of the conditions is essential to the removal of what is wrong.

What are the causes of dishonesty and lack of good sportsmanship in school athletics? A fundamental cause is the inordinate importance which is attached to the winning of the game. For this the boy on the team is not to blame. His intense desire to win is shared by his fellow students, his coach and teachers, his parents and friends. At the end of a football season in which our team had won some games but had been disastrously defeated by the team of a rival school, I was telling the father of one of the boys on the team how I thought his son had developed some admirable traits of character through the training and expe-

rience which the season had given him. "Yes," said he, with a show of impatience, "but why didn't you beat Oak Park?" It is hard for the American, intent on business, to be interested in any enterprise that does not bring immediate and tangible returns. And what is a game for, if not to be won? Sport for sport's sake is too utopian an ideal to make an easy appeal for acceptance.

Another element in the case is the undue prominence given to school boy athletes by the newspapers in which their pictures appear side by side with prize fighters and other professional athletes. Furthermore, much harm comes to the boys who take trips halfway across the continent to determine the claims for championships, accompanied by representatives of the press.

Another important factor is the small number of students who take part in athletic games. In most schools a comparatively small number of students form the athletic teams while the larger part of the students share only to the extent of vociferously cheering the team and contributing to its financial support. This system places great value on the ready-made athlete and offers great temptation to recruiting while it does little to discover and develop the boy of potential athletic ability.

Secondary school athletics reflect the tone and practices of college athletics in a marked degree. Principals and teachers have derived their athletic ideals from their college experiences, and coaches of school teams have often received their training on college teams. That collegiate sports have shown the same evil tendencies is apparent. The elaborate codes of rules governing intercollegiate athletics reflect the existence of evils which they attempt, often vainly, to remove, and the exhibition which faculty committees afford when dealing with charges of athletic ineligibility often reveals a situation of mutual suspicion between rival institutions and a desire to secure an advantage rather than to discover and act upon the real facts in the case.

But when all else is said, the immediate responsibility for most that is wrong in any specific situation rests upon the coach. He more than anyone else sets the standards and determines the practices of the team. If he trains his boys to beat the pistol at the start, or to commit a foul in the line, he is a center of moral contagion. Seldom will a team show a higher moral standard than that of its coach. That this sometimes occurs the following incident recited by "Dad" Elliott, All Western end of a few years ago, will prove.

"The most important game of the series was to be played the next day. The evening practice was over; the boys had packed their suitcases ready, and were quite confident that they could win but for ———, the opponent fullback's, punting. Alumni and faculty had given their words of encouragement; the coach had given his final instructions for the day; and the boys were just about to leave the training quarters when the coach said,

'Now, remember, the first thing in to-morrow's game is to put ——— out of business.' There was just a second's pause, when a young Swede, the fullback, spoke up and said, 'Coach, if these are the tactics in to-morrow's game, you can count me out.' He was quickly joined by two other players, all of whom thought it would not only cost them the privilege of playing in the game the next day (the game they would rather play in than all the other games of the year), but that it would also cost them their letters for that year. In less than ten minutes that coach was forced to make an apology to his entire team."

School athletic teams have too often been placed in charge of irresponsible men, whose personal morals are questionable, whose standards of sportsmanship are low, and whose reputation as coaches or as popular idols in the community depends upon winning games at whatever cost. This is in sharp contrast with the practice of the English public schools, in which the masters feel it as much a part of their work to share in the sports of the boys upon the playground as to instruct them in the classroom. It is not difficult to trace to its source the real reason why sport is enjoyed by English schoolboys for its own sake and why the low standards of honesty and sportsmanship so often appearing in our schools are not found in the boys' schools there.

And what about the remedy? How may we make athletic sports in our secondary schools contribute valuable elements to the social and moral development of our students?

In the first place, those who are responsible for our schools must get a new and enlarged idea of the value of physical games. If it is worth while for fifteen boys to play football, it is worth while for two hundred boys to play the game. It is sometimes objected to our present method of specialization that a small number of boys who do not need the training get it all. This valid objection should not be possible in a school which sees the real social function of athletics, to give to all students an opportunity to participate, on equal terms and under careful control, in a widely varied range of athletic games. Several private and a few public secondary schools are putting into effect this broad and rational plan of athletic organization.

May I be allowed to refer to the University High School, connected with the School of Education of this university? Last year we had 229 boys enrolled in the school. Interclass games to the number of 162 were played in the following sports: Football, basket ball, baseball, track, indoor and outdoor, indoor baseball, swimming. The total number of boys on these teams numbered 370. Seventy-six interschool athletic games were played in the following sports: Football, soccer, basket ball, baseball, swimming, track, indoor and outdoor, golf and tennis. The total number of boys on these teams numbered 164. The total number of boys participating in intraschool athletics is seen to be

more than twice as large as in interschool athletics, and the total number participating in both numbered 534. From this it will be seen that each boy in school, on an average, took part in two forms of competitive athletics. The number of boys who did not take part at all was almost negligible. All these interclass games were played on school grounds under the immediate control of members of the department of physical education, or in a few cases, of older boys in the school. These class contests lead to warm rivalry and serve to interest the students in games in which they themselves participate. The teams representing the school in contests with other schools are developed as a sort of by-product of the interclass games, while they serve as a strong incentive to the development of athletic skill throughout the school. Last year's football team was typical, in which all the members, save one, had been members of the school from the beginning of their high school course, and this one, who was a senior, had entered the school at the beginning of his second year and played on his class team for a year before finding a place on the school squad.

This large participation of boys in competitive sport is approached by the girls who have class series in basket ball, baseball, tennis and swimming, although the number of games appropriate for girls is less and basket ball is the only game in which there is interschool competition.

As having no small bearing upon the moral effects of athletics as conducted in the University High School, it is significant to note that all the boys who secured their emblems in interscholastic sports secured for the entire year 18.4 per cent A grades, while the entire school secured 18.2 per cent, and only 2 per cent failing grades, while the percentage of failure of the entire school was 6.2. The twenty-five boys who secured emblems in two sports each had not a single failing mark for the entire year.

As I look back over the years during which this system has been developing, I can see many specific evidences that the moral tone of the school has been greatly improved through athletics. There has been a growing spirit of democracy which now recognizes and rewards real worth. A few years ago, a boy of excellent quality and the best track athlete in the school did not receive a vote for the captaincy, while the boy who was elected did not win a point in any meet of consequence for the year. The boy who deserved the position happened to be working his way through school, while the other boy had the superficial claim to social preferment which money gives. This year, a younger brother of this boy, who also is earning his own way through school, is captain of our baseball team by unanimous vote. I remember when the members of the football team were given sweaters, watchfobs, or other articles of value at the close of the season, and if they had been asked why they had received

these gifts, they would have said that they had earned them. Now no athlete receives anything but a simple letter costing a few cents, and he is proud to receive this as recognition by the school that he has deserved well because he has done his best as their representative. A large part of his personal equipment, such as shoes, each member of a team provides for himself. The cost of athletic equipment now is less than half as much as it was when the number of teams and contests was considerably less. Accompanying this growth of a democratic spirit, there has been much less tendency to develop the swaggering, boastful type of athlete. Our best athletes are now likely to be modest and unassuming, and there is frequently evidence that the school admires them the more because of this.

Among the various organizations of the school there is none that is more effective in furthering the best ideals than the captains and managers' club, which, as its name suggests, is composed of these representatives of all the athletic teams of the school. This club takes up not merely questions pertaining strictly to athletics, but questions of moral conduct, both on the field and in the other relations of school life.

This rather extensive organization of athletics has been a gradual development beginning with a recognition of the social value of student activities in general and the peculiar opportunity which athletics affords because of the intense interest which students have in all forms of physical competition. It has required careful planning by members of the faculty and constant and repeated insistence upon high ethical standards in all athletic relations, both for individual players and entire teams. By far the most important factor in the whole situation is the physical director and his assistants. I have spoken of the coach as the person most directly responsible for the evils appearing in athletics. He is also the person most directly responsible for the moral good that may and sometimes does result from athletics. A few schools have recognized the value of physical directors of high character and clear insight into the moral significance of athletic games. A new type of expert is developing who promises to revolutionize the athletic life of our schools. In the place of the man who teaches boys how to commit a foul without detection or to beat the pistol at the start of the race, there is now appearing another who trains his boys to play the game within the spirit as well as the letter of the rules and inspires them with the belief that the team cannot afford to win a game by any other than fair means. And this spirit is quickly caught by an entire school, which thus shares the moral training which is first given to the members of the team. At the close of a most successful track season, the captain of the team said before the school that he was proud of the fact that all their trophies had been won by a

team which had never committed a foul. And the statement was met with ringing cheers.

There is no one whose position makes him so powerful a moral factor in a school as the physical director. Not even the principal can do so much directly to clear the moral vision of the boys as the physical director who meets them in relations in which their real inner lives and motives are most clearly revealed. A good illustration of the incidental moral instruction which such a man may give came to the writer's attention. The student manager of a team was sent to secure some expensive articles of equipment. He returned with one more than was ordered, and being asked why he had an extra one, said, with apparent satisfaction at his managerial smartness, that he had noticed the clerk had given him one more than he had paid for but that he had not thought it necessary to call his attention to it. The boy was much surprised when he was told that he must return the extra article at once, and declared that it was not his fault but was "one on the clerk." But the boy finally did as directed, and learned that "the fellows have got to be on the square with the Doctor all the time." And the lesson given to this boy doubtless reached many others in the school, a lesson sorely needed in these days when petty graft is of such common occurrence. This case well illustrates the type of opportunity for sound moral training which comes to the physical director daily as he meets the boys in the gymnasium and on the athletic field. And it is because the occasions for this moral instruction do not have to be dragged in, but arise naturally in the activities in which the boys and the director work together with joyous enthusiasm, that his moral influence is more potent than that of any other school officer.

However clearly the physical director sees the larger possibilities of his work and however firmly he insists upon the highest standards, he can not be most effective unless he can always feel behind him the sympathetic and strong support of the principal. There are many ways in which he may reinforce the high standards set up for athletics. The following correspondence with the treasurer of the Illinois Central Railroad illustrates this point:

Chicago, Ill., March 10, 1915.

Gentlemen:

Some weeks ago a basket ball team from the University High School took the trip to Harvey on one of your suburban trains and during the trip they broke two panes of glass. While no train official interfered or spoke to them about it, the matter has come to my attention and I have had the boys hand me the enclosed amount—one dollar—which I found upon telephone inquiry to be the value of the property destroyed. It is the practice of the school to insist upon full and complete responsibility of its students when they are representing the school in any capacity and we do not wish them to feel that they can destroy property belonging either

to a person or a corporation without restoring it fully. Will you kindly send me receipt for the enclosed amount to complete the transaction?

Yours very truly,

FRANKLIN W. JOHNSON.

Illinois Central R. R. Co.,
Chicago, Ill.

Chicago, March 15, 1915.

Mr. Franklin W. Johnson, Principal,
University High School,
Chicago, Ill.

Dear Sir:

In addition to the formal receipt for \$1 which we sent you March 12, and which covered damage to one of our suburban cars by your basket ball team, allow me to thank you in this manner for the very creditable act in making restitution for damage accidentally done, I am sure.

We feel the more grateful from the fact that the payment was made without solicitation and that it was a voluntary proceeding on your part. How much better and happier every one would be if such acts were performed by the people, generally.

With kindest regards and success to you and your boys, I remain,

Yours very truly,

OTTO G. NAN,
Local Treasurer.

An insistence upon the practice of good sportsmanship, year after year, develops traditions of good sport which are of priceless value to a school. Happily, many schools are getting such traditions. A well-known school on the day following a great track meet voluntarily sent back the trophy because it had been discovered by the school authorities that one of their point winners had been ineligible. All the trophies proudly displayed on the walls of their gymnasium have not brought such honor to the school as this one which might have been retained had the moral standard of the school been less high. In another school, following the annual football game with its closest rival, it was discovered that a player on the winning team had been ineligible by reason of some scholastic requirement which had been overlooked before the game. A letter was promptly sent to the opposing school stating the fact and relinquishing the victory. And the rival school acknowledged this act of good sportsmanship but declined to accept the victory.

I hope I have convinced you that I am an ardent advocate of athletics in the secondary school; that I would not have less athletics, but more, until every boy and girl shall have an opportunity to share in the pleasure and the profit derived from wholesome sports. I am greatly concerned about the harmful results of much of our overspecialized athletics with the emphasis placed

not upon playing the game but upon winning the contest. Our hope for the future lies in the training of a large body of men and women who see in physical education not merely the development of the body but also the larger moral and social development of our boys and girls which may be secured through physical training in its larger aspects. To this larger purpose and ideal, I judge your society is committed, and I congratulate you upon the large service which is in your power to perform.

A COURSE OF STUDY IN DANCING FOR HIGH SCHOOL GIRLS.

CARRIE VAN R. ASHCROFT, NEW YORK CITY.

WORK FOR FIFTH TERM.

ASSEMBLÉ.

To bring the feet together from an open position, with a jump. The exercise should suggest both power and lightness. This is shown by a high, strong battement followed by a light landing on the balls of the feet. The assemblé must be executed vigorously and with speed and lightness. Use a strongly marked polka or schottische. Count "and one, two," for each assemblé.

Assemblé Forward and Backward.

Stand with the right foot in fifth position back; arms in the low first position. Look forward to right corner of room. For the count "and," brush the right foot high into second position. On count "one," jump from the floor and bring the right foot to fifth position front, landing on the balls of both feet at the same instant and bending the knees slightly. Turn the head to look forward left as you place the right foot in front; keep the arms in the low first position. On count "two" stand erect. Repeat left and right alternately moving forward. Execute eight assemblés finishing with the left foot in fifth position front.

To move backward, begin at once with the left foot. Execute the battement high in second position with the left foot and replace it in fifth position back with the jump, as in the forward assemblé. Continue moving backward right and left alternately finishing with the right foot in fifth position back on the eighth assemblé.

Assemblé Arabesque.

Stand with the right foot in fifth position back; arms in the low first position. On count "and one" execute one assemblé bringing the right foot to fifth position front. On count "two" hop on the right foot, in place, into the arabesque position. Right arm diagonally forward, up; left arm down and back; left leg raised backward with a straight knee. Repeat the exercise left and right alternately (eight times in all), moving forward. Begin the battement by brushing the foot up from the floor. It gives snap and style to the exercise.

GLISSADE ASSEMBLÉ.

Stand with the right foot pointing in fourth position back; right arm bent across chest, left arm in second position. Count "and one, two" for each exercise. Execute it with vigor and speed. On count "and one" execute one glissade sideways right by sliding the right foot to second position and drawing the left foot to fifth position front. Arms remain in the same position. Look over sideways at the right foot; on count two execute one

assemblé by bringing the right foot to fifth position front. Drop the arms in front;—stand very tall; look forward left. Repeat the exercise to the left—and right—through a phrase of the music. Practice the exercise to 6-8 rhythm at first. When it is well learned use waltz music or polka, and execute rapidly. One glissade assemblé is often used as a finish but not as a step by itself.

Glissade; Jeté.

Stand with the right foot in fifth position back; right arm bent across chest; left arm in second position. Count "and one, two" for the exercise.

Glissade ("and one").

Slide the right foot into second position and draw the left foot to fifth position front. Arms remain in the same position. Look down sideways right, bending very slightly from the hips.

Jeté ("two").

Brush the right foot up into a low second position and leap onto it in fifth position front, raising the left foot close behind the right in fifth position back. Sway the arms across the chest so left is bent and right is out in second position. Stand very tall; chest and head lifted. Look forward to the left corner of the room. Use this combination sideways right and left and move forward.

To move backward, execute the slide diagonally backward on count "and one."

Glissade; jeté backward and turning.

A more effective and professional way of doing the preceding combination is to add the backward turn as follows: one glissade; jeté diagonally backward to right and one diagonally backward to left with body facing to front of room. Then repeat the combination to right and left making one complete turn in place to right and gaining distance backward, as follows: With the glissade right make about a quarter turn to right. With the leap onto the right foot, turn a trifle more to right. With the glissade left, move sideways left, directly "up stage" (to rear) so that with the leap onto the left foot you complete the turn to right by facing front.

Repeat through the musical phrase alternating the glissade jeté to right and left, facing front, with the turn. Close with an assemblé instead of the last leap.

BALLONNÉ BOURRÉE.

Ballonné (measure 1).

Stand with right foot in third position front and arms in third position right. Do one ballonné moving sideways right. Make it very large and free. Look up at right hand.

Bourrée (measure 2).

Cross right foot behind (one); step sideways left ("and"); cross right foot in front ("two"). Arms change from the third position to second; to first and open again to second position just as you finish the bourrée. Repeat to left and right and left. This is one of the

best combinations for polka rhythm. It should suggest great joy and be executed with abandon. It is most effective when done diagonally forward, moving down stage (to front) in a zig-zag line.

Two jetés; one bourrée.

Two jetés (measure 1).

Stand with the right foot in fifth position back; right arm bent across chest; left out in second position. Look forward to right. Brush the right foot up into second position and leap onto it bringing the left foot into fifth position back and raised. Arms sway across chest, so left is bent and right is out in second position. Look forward to left. Repeat the leap onto the left foot and change the arms so right is bent and left is in second.

Bourrée (measure 2).

Keep the arms in same position. Place the right foot in fifth position back (1) step sideways left ("and"); cross right foot in front and change arms (2). Repeat the combination to left and right and left. This is a very available combination to use in a polka series. It is quick and playful.

PAS DE CHAT.

This step is composed of two leaps sideways. The leaps may be small and close to the floor or very large, bringing the free foot up close behind the other knee.

Stand with the right foot in fifth position back; right arm across chest; left arm out in second position. Leap sideways onto the right foot, raising it in fifth position back during the leap; and bring the left foot to fifth position front with a leap. The foot is directed backward with toes pointing downward for each leap.

EXERCISES IN THE PAS DE CHAT.

I.

Three pas de chat.
One bourrée.
(Four measures.)

Three pas de chat (3 measures).

Stand with the right foot in fifth position back. Do three pas de chat, moving sideways to the right. Keep the arms bent across the chest, look down to the right. At the end of the third pas de chat, the right foot is still in fifth position back.

Bourrée (1 measure).

Raise the right foot in preparation and instantly replace it, crossing it back; step side left; and cross right in front. Sway arms across chest so left is bent. Stand up very tall. Look forward to left corner. Repeat all to left moving sideways left with three pas de chat, and across to right with the bourrée.

II.

Bourrée; pas de chat.
(Two measures.)

Bourrée (1 measure).

Stand with the right foot in fifth position back; arms as usual, right across chest and left in second. Raise the right foot and instantly replace it crossing it in fifth position back. Step side left; and cross right in front. Sway the arms across to opposite side just as you place the right foot front.

Pas de chat (1 measure).

Leap sideways onto the left foot raising it in fifth position back during the leap. And bring the right foot to fifth position front with a leap. Keep arms in the same position and look down to left side. Then lift the body and repeat the bourrée pas de chat moving sideways to right. Repeat to left and close with four small pas de chat moving sideways to right; arms lateral position to left; bend body slightly to look down sideways right.

III.

Assemblé arabesque.
Two bourrées; pas de chat.
(Four measures.)

Assemblé arabesque (measure 1).

Stand with the right foot in fifth position back; arms in the low first position. With an assemblé bring the right foot to fifth position front. Hop on the right foot into the arabesque position; right arm forward up; left arm down and back; left leg raised backward.

Two bourrées (measures 2 and 3).

Cross left foot behind; step side right; and cross left foot in front. Just as you cross left foot in front change arms to the lateral position to left, that is, your right arm is across chest and left is out in second. Repeat the bourrée moving to opposite side (left) and sway arms across chest just as you place right foot in front.

Pas de chat (measure 4).

Leap sideways onto the left foot, and bring the right foot to fifth position front with a leap. Keep the arms in same position and look down to left.

Repeat all of the combination.

The left foot is in fifth position back; ready to begin the assemblé. Bring it in front with the assemblé and hop on it into the arabesque position. The first bourrée begins with the right foot and moves sideways left; the second bourrée is to the right; and the pas de chat is to the right.

ADAGIOS.

An adagio is a balance exercise. While standing upon one foot, the other leg executes a large slow movement with the hip joint as the center of motion. An arm movement is combined with the leg movement. In

the stage adagios, the dancer makes a slow or quick turn upon the ball of the foot in the position of "attitude" or "arabesque." Variety is introduced by combining glissades and bourrées with the adagio. The adagio in second position will not be described because it requires too much practice to attain with any degree of poise. The simplest adagios are not beyond the ability of schoolgirls. For music use a slow waltz or something in 6-8 rhythm or a "nocturne."

To describe the movement of the leg in an adagio we use the French verb, *developper*, to unfold or develop. One foot is drawn slowly up against the other leg to the knee then slowly extended to an open position.

ADAGIO EXERCISES.

I.

Developpé right to fourth front.

Replace in fifth front.

Small beating to fifth back (eight measures).

Stand with the right foot in fifth position front. Draw it up against the left leg until it rests upon the inner side of the left knee (1-2). Extend the right leg slowly into fourth position front until the foot is in line with the left hip (3). Hold the foot in this position (4-5). Replace the right foot in fifth position front (6). Point the right foot in second position and draw it to fifth position back (7-8). As the exercise begins, the arms move from a low first position up and forward until the hands are opposite the chest. Open the hands just as the leg extends forward and the arms move slowly into second position, palms up. As you replace the foot, move the arms slowly downward into the low first position. As you point the right foot in second position open the arms sideways, holding them down low, palms down. Look down at the right foot, bending at the hips. As you draw the foot to fifth position back, drop the arms sideways and stand erect. Repeat the exercise with the left leg and repeat right and left.

II.

Developpé right to fourth back.

Replace in fifth position back.

Small beating to fifth front (eight measures).

Stand with the right foot in fifth position back. Draw it up to the left knee (1-2) and extend it slowly to fourth position back (3). Hold the position (4-5). Replace the foot in fifth position back (6). Point the foot in second (7) and draw it to fifth position front (8). The arms move as in adagio number one, from the low first position; up to first; out to second and then down; and again sideways for the battement.

III.

Developpé to fourth front and back.

(Eight measures.)

Stand with the right foot in fifth position front. Draw it up to the left knee (1-2). Extend it slowly to fourth position front (3) and hold the position (4). Bring the foot in against the left knee (5) and extend slowly to fourth position back (6). Hold the position (7). Replace in fifth position back (8). The arms circle from first to second position

as you extend the leg forward. Bring the arms to first position just as you pass the right foot against the left knee. Open the arms to second position as you extend the leg backward. Drop the arms sideways as you replace the foot upon the floor. Repeat left and right and left.

IV.

Developpé to fourth front.
Circle to fourth back; arabesque.
Replace in fifth back (eight measures).

Stand facing the front left corner of the room with the right foot in fifth position front. Draw the right foot up to the left knee and extend it slowly to fourth position front (1-2-3). Circle the leg through second to fourth position back (4-5-6). Open the arms from first to second position and finish with the arabesque position. Hold the arabesque position facing left corner (7). Replace the right foot in fifth position back, and drop the arms sideways and pivot to face right corner (8). Repeat left and right and left.

POLKA SERIES.

I.

Six polka steps forward.
Step and turn (eight measures).

Six polka steps (measures 1-6).

Begin with the right foot and do six polka steps directly forward; arms in third position left and right alternately. That is as you polka forward right the arms are up high in third position left. Look up at the left hand. Change the arms to third position right as you polka forward left.

Step and turn (measures 7-8).

Step sideways right (measure 7) arms in second position. Swing left foot around in front of right and turn high on toes, all around to right and face front. Arms as usual circle from second position to first; to fifth and open into second position as you complete the turn.

II.

Six polka steps backward.
Step and turn (eight measures).

Six polka steps (measures 1-6).

Begin with right foot and do six polka steps backward. Arms sway across body to right and left. Turn the body slightly around with each polka step, so you look to front of room over your shoulder, left and right alternately.

Step and turn (measures 7-8).

Step sideways right and turn as explained above, finishing with the weight equal on both feet.

III.

Slide-hop backward; step forward.
 Three running steps diagonally forward.
 Three polka steps backward.
 Three running steps (eight measures).

Slide-hop and step (measure 1).

Slide the right foot diagonally backward and hop lightly on it, raising left foot forward. Sway arms freely across to right side ("one and"). Step forward on left foot and sway arms across body ("two").

Three running steps (measure 2).

Three running steps diagonally forward to right. Beginning with the right foot, run three steps diagonally forward to right. Arms in second position, all of the above must move in a diagonal line toward the front right corner of the room. As you begin the step with the slide-hop backward, face the front right corner.

Repeat left (measures 3-4).

At the end of the running steps the left foot is free. As you slide-hop backward on the left foot, turn to face the front left corner of room. With the running steps, move toward the front left corner of the room.

Three polka steps backward (measures 5-7).

Move backward with three polka steps; right, left, right; turn body and sway arms with each step as explained in steps II.

Three running steps (measure 8).

Beginning with the left foot, run three steps diagonally forward left. With the third step carry the weight well forward so the back foot simply points. The left arm is raised forward up and the right arm is down and back, the arabesque position for the arms.

Repeat the whole combination beginning again with the right foot, and close with a true arabesque; weight forward on left foot, right leg raised backward; arms in arabesque position.

INTERLUDE.

Backward turn in place (four measures).

Turn high all around in place, backward to right. Begin by placing the right foot close in fifth position back. Turn high on the toes with very small steps. Right arm is up high as you begin the turn. Bring the arms to fifth position when half around, and open them slowly into second position as you complete the turn. Pause just an instant before beginning the next step.

IV.

Ballonné bourrée forward.
 (Eight measures.)

Ballonné bourrée (measures 1-2).

Move diagonally forward right and left with ballonné bourrée. This step is fully explained in the notes in this issue. Do the combination four times. Move forward as far as possible. The action must be large and free.

V.

Point forward and cross behind.
One polka step sideways.
(Eight measures.)

Point forward and cross (measure 1).

Point the right foot diagonally forward; right hand down over foot; left arm out sideways (Illustration Fig. VIII., April issue) cross the right foot behind, and raise the right arm up high over head. Look up at right hand. Left arm is out in second position.

One polka sideways (measure 2).

One polka step sideways right, arms in second position.

Repeat all left (measures 3-4).

Repeat all of the combination beginning with the left foot.
Repeat right and left (measures 5-8).

VI.

Step and bend to right and left.
Two slides to right.
Step right and bend.
(Four measures.)

Step and bend (measures 1-2).

Step sideways right, arms in second position. Cross left foot to fifth position back, stepping on ball of foot and bend and stretch both knees quickly, as in a peasant's courtesy. Sway left arm to first position, so the arms are in the lateral position to right for the bend. Repeat step and bend to left side, changing arms as you bend.

Two slides to right (measures 3-4).

Two slides, moving sideways to right; arms in second position.

Step and bend (measure 4).

Step sideways right and bend.

Repeat to left (measures 5-8).

Repeat right and left (measures 9-16).

Instead of the last step and bend to left on measure sixteen step sideways left, and close right foot to left in first position, keeping arms in second position.

VII.

BALLONNÉ BOURRÉE.

Point cross behind; one polka sideways.

Ballonnée bourrée (measures 1-8).

Repeat step IV. to right and left; moving diagonally forward.

Point cross behind and polka.

Repeat step V. as explained.

VIII.

Step right and turn.
Step right and pose.
(Three measures.)

There are three extra measures of music. Step and turn swiftly to right on measure one. Step side right again; point the left foot in fourth position back; arms in third position left. Look up at left hand. Hold the pose for the third measure.

NOTE. As a substitute for step VI. use *assemblé arabesque*; two *bourrées*; one *pas de chat*. This is fully explained in the notes upon the *pas de chat*. It is a harder combination than the one described for step VI., but it improves the dance.

Music: "Reconciliation." Polka de caractere from *Les Millions d'Arléquin*, by Richard Drigo. "*Les Millions d'Arléquin*," by Richard Drigo, published in Leipzig; can be secured at Ditson's or Schirmer's. Omit the eight measures of introduction. Use each melody except for step VI. Use sixteen measures only and omit the ten extra measures of the same melody. The first melody is repeated and is used for steps VII. and VIII.

FOLK DANCES.

"Troika," a Russian folk dance, arranged and published by Louis H. Chalif of the Chalif Normal School of Dancing, New York City, or "The Cracoviak," a Polish national dance, also arranged and published by Mr. Louis Chalif.

MUSIC FOR FIFTH TERM.

See list for first term in the April issue of this magazine. For the "combinations" any good quick polka will do. For the *Adagios* use a slow waltz or a nocturne.

PRESENT OPPORTUNITIES FOR PHYSICAL EDUCATION.*

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I feel a great deal of hesitation in talking upon this subject because it makes the double assumption that I know something about education in general, and about physical education in particular. Assuming that either of these two assumptions is true, I feel a certain venturesomeness in undertaking any discussion of the other.

In the present state of educational development we are being caught between two seas. On the one side, there is the obsession for the spectacular type of athletics. I have myself very grave doubt as to the legitimacy of spectacular athletics as a part of the general educational procedure. I don't believe that the educational institutions in which we are interested were founded for the maintenance of theatrical sports. But it is perfectly useless to talk about these things; we have our spectacular games and we all like to go to them and as long as they are good paying performances we shall have thousands of dollars coming in from such athletic undertakings. We need, therefore, to correlate them with educational ideals and methods.

On the other side, if we seek to avoid the danger of making an educational institution a purveyor of sensational thrills on the football grounds, are we not in danger of reverting to the other extreme and insisting that the entire life of the college should be described in terms of non-athletic activity? There are those all over the country saying this in so many words. (The whole field of intercollegiate athletics is being criticised and assailed from this standpoint.

These two dangers beset us, but there is still another danger, greater than either of these, viz., that of identifying physical education with athletics and intercollegiate sports. Those who have at heart the real interest of physical education are very properly urging that athletics should be but one phase of the whole program. I firmly believe that physical education is much more than athletics; and on the basis of this belief I propose four theses concerning the value and import of physical education.

/ The first thesis is that physical education is to be distinguished from the maintenance of athletic activities in the interests of a winning team. Of course, it may be regarded as including these activities if they are properly conducted. But physical education is not to be identified with mere exercise.

* Read at the Third Annual Convention of the Middle West Society of Physical Education and Hygiene, Chicago, April 30, 1915.

Taking exercise may be a good thing for gentlemen putting on flesh, but it is not necessarily physical education. The operation of our athletic department should be recognized in our institution as part of the general educational program of the institution. I fancy that the objections which are being raised against the athletic activities of the colleges will be met only when we take this attitude toward physical education. If we turn over the whole matter of exercise among our boys and girls into the hands of a man who is trying to make a winning team, we are bound to have results which are futile and self-defeating. No sane man can ever identify the procedure involved in getting out a winning team with real physical education. The ideal of a winning team ought to be secondary in physical education. We people who represent general educational interests ought to have courage enough to stand back of a physical education department which will set up as its real ideal, not championship teams, but well-rounded, symmetrical lives. In the proportion that physical education has the support of the entire institution with some such ideal as this, will its program be successful. But in the proportion that an educational institution as a whole either identifies physical education with intercollegiate athletics, or looks upon it as a mere addendum to the institution's schedule will the ideal of the more comprehensive, constructive physical education disappear. Therefore, I would first of all insist that those of us identified with educational institutions emphasize this larger purpose of physical education, and thus bring it into more intimate connection with education as a whole.

But, on the other hand, if physical education is broader than mere athletics, it is also broader than merely going through so many muscular activities. As a man who has not the chance to play as much as he likes, I can get results from mere relaxation, by just doing nothing.

In my boyhood, after reading, "How to Grow Strong," my great ambition was to build up a set of bulky muscles. I went through the necessary activities to get these bogus muscles, and used to point with pride to my achievement. Why did not some one tell me that this was not the method of conserving and controlling the vital forces?

In education I am coming to feel one great duty of the teacher is to teach students how to forget. For these many years, we have been trying to teach them to remember. But blessed is the man who has the power of forgetting the things he ought to forget. Physical education, similarly, ought to include education in the power to do nothing as well as in the power of building up. It is true that this is coming into our physical education departments more and more. We are coming to appreciate the physical side of life and in many cases, instead of preaching activity, we are preaching rest. But the question is: How are we to rest?

1. *False thesis*
2. *Such thesis*

Why should not the people in charge of physical education teach us how to rest? Should it not be just as much the duty of people in our overtaxed, unduly strenuous American life, to learn how to rest as how to work? Why should we not be taught the science of the physical rhythm of life, the systole and diastole, the ebb and rise of our activity? It is only by such teaching that we can learn the meaning and use of rest. Hitherto we have been teaching people how to act. We have overemphasized the strenuous life, the life of constant exertion. But we are coming to realize that this may be only a protracted suicide. We see a brawny, full-blooded man drop dead in the midst of his activity. He is overworked. He breaks down suddenly because he has been trained to think that the one great thing in life is activity. Nowadays it is reassuring to believe that you who are going to teach our children will teach them the duty of rest, and how to gain power through relaxation; that you are to teach them that athletics are valuable only as they conduce to the maintenance of healthy and well-rounded lives and not merely to the glory of an institution. For it is as crying a shame for an educational institution to bring to bear upon a boy the sharp necessity of winning the championship, as to force him to compete at the expense of his own general health, for the glory of the alma mater. We should not make alma mater cannibalistic.

3. *The second thesis is as follows:* Physical education should secure habits of physical hygiene. No other department is so well fitted to teach these things from the physiological instead of the pathological approach.

We have two methods of approach to health: that of the physiologist and that of the doctor. But the approach to life in terms of physiology is far more important than the approach in terms of pathology. The knowledge of how to live is much more valuable than the knowledge of how to get well. This principle becomes increasingly significant to men, drifting beyond the age of forty and seeing their children coming on. The duty of physical education should be to teach people how to live so that their physical vitality during youth will be the great reservoir of middle-age efficiency. If the powers of youth are not conserved, when a man approaches middle age he has nothing to draw from, and just when he should be at the height of his efficiency and strength, we find him breaking down. So you teachers of physical education should make it one of your main objects to teach the young the economy of strength, the conservation of power. There are many young men and women in college who are really not aware of the fact that sooner or later the powers of their youth will be diminished and that the time will come when they must live on their past instead of on their present. It is of the utmost importance to teach these young people the meaning of a rational, physical thrift.

The great motto of the ordinary educational institution is to "play the game of life to the limit." I remember reading some time ago an account of a boat race in which it was related that the members of the defeated team came in looking fresh. At the time I thought they had no business coming in looking fresh. But later I modified my judgment. If the whole business of those young men was to win a boat race, they should try to win the race regardless of physical collapse; but if their business was to live fifty years after that time it was better that they should come in looking fresh.

This second proposition may not seem to you very revolutionary; but I believe that it would be revolutionary to get into students' minds that life can be conserved and drawn on bit by bit and that it must not be each minute played to the limit. Let us become Marathon runners, always in training, for the game of life, but regulating and conserving our forces so that we can play the game long and effectively. For the really significant thing in a man's life is not his youth but his middle age. He becomes at this time most valuable to society, he is then best able, with his wealth of experience and his physical resources, to do his work with skill and effectiveness. From this point of view, training in proper physical education becomes of the utmost importance to a democracy. I should like to see our boys and girls trained in this physical thrift. We would then have a happier and fitter race. On every hand we see boys and girls breaking down over things utterly unimportant in the great game of life. Of course, we all know it is quite useless to give advice to most young people; they know everything until they have once got into trouble. Yet the department of physical education has this extraordinary opportunity for teaching boys and girls the sacred necessity of conserving life. You know that a word from a physical director will have more weight with a boy or girl than all the anxious admonitions of the parent. Youth says, "When my father and mother forsake me, the physical educator will take me up."

I come now to my third proposition. Physical education should aim to correlate physical and mental activity. It should teach certain types of activity now included under manual training.

I know very little about the details of such activity, but I see its fundamental importance for the larger problems of life. As I meet men nowadays who are middle aged, I find them of two sorts. There are those between forty and sixty who have lost their momentum largely because of lack of coordination between their mental and physical activities. There are those, on the other hand, who in this period gain momentum because they have trained their bodies to become servants of the mind. The greatest educational value of such an activity as manual training comes from the effort to obtain coordinations of eye and hand in response

to the will. Have we laid enough emphasis upon this factor in physical education? The very fact that activity must be directed toward an end, makes the physical training a means to that end. I can illustrate this in a number of ways, though my illustrations may show my ignorance of the whole matter. Take the psychological attitude of defense. We train our boys in boxing. The physical activity is directed to the end of defense, and as the man becomes a better boxer, he is able to defend himself more effectively. Boxing represents the strict coördination of mental attitudes and physical movements with a specific end in view. In short, the mental controls the physical. Take again the simple matter of writing a word. How many of us, when we are writing often arrange the letters of words in their reverse order. This ordinary experience represents bad coördinations between physical and mental activity. But how often do we suffer from maladjustment of our mental and physical activities in more important matters! The hand is too quick or too slow, and we mar our whole performance. Can we not find some way of training youth in more delicate coördinations, in nicer adjustments to the tasks in hand? Manual training is doing this to some extent, but the program of this sort of physical direction should be enlarged and studied more in detail. It should be intimately connected with the whole physical education schedule.

✱ I come finally to my fourth point which is so obvious that a mere statement of it will suffice to show the meaning of it. Physical education should be a determining moral principle in the lives of students.

It is highly desirable that athletics should be controlled by the department of physical education for a more far-reaching purpose than that of winning games. Special attention should be paid to the character of the physical director. For these teachers are men who are setting up in many different ways the moral attitude of students. I believe that they ought to look upon their contacts with students as of genuine educational import. But we all know how very seldom this ideal is realized; how often people go into athletic leadership without the ambition to generate wholesome social attitudes, and as a result their influence is a menace to the boys whom they touch. Everyone present could without doubt give instances of cases in which a coach has been a serious menace to a boy's ideals and whose influence has served to make the boy antisocial.

✱ Although we say that athletics is valuable training for the game of life, we must also bear in mind that it may be a dangerous contributor to the game of life. A boy who is told he can play the way he wishes as long as the umpire doesn't catch him, is being schooled in dishonesty, in an attitude of mind which defies all rules and laws.

But all this is self-evident—I only wish to emphasize it. To

take a young life, to direct its efforts at the point where its ambitions are most intense, is one of the rarest opportunities that can come to any group of individuals. The rest of us educators do not so often have it. We set tasks for the students and when we have a chance to omit an hour with them, they take it as a dispensation of grace. But what an opportunity you teachers of physical education have! Through the direction of the immediate interests of students, you have the opportunity to fix their ideals on the larger, more valuable ends.

Thus the whole purpose of physical education should be the seeking of personal health. This is a thing which we all recognize in theory, but I want to drive it home in terms of our responsibility for the proper sort of physical training. Let us not be afraid to be regarded as idealistic. It is a common thing for the business man to look upon and criticise the academic man as remote, idealistic, impractical. But let us be brave enough to stand for our ideals.

These are the four propositions which I venture to suggest. They all, however, are embodied in the one central idea of education in living, education in the training of the self in self-control, in self-direction, in the conservation of personal powers, physical as well as mental. This making of the physical a real and helpful servant of the mental, constitutes the great opportunity of physical education. In other words, the department of physical education is indispensable for building up a symmetrical life, in terms of actual experience, in the aspirations of the soul. Aspirations get expression only when the soul has a body by which to express itself, and a vitality by which its activities can be supported.

SUGGESTIONS FOR A GREATER PHYSICAL EDUCATION.*

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It is unfortunate that the expression, "physical education," just as is the case with the word, "play," not only does not naturally convey the content it has come to have in the minds of some, but even carries a suggestion antagonistic to the best sense of the term. Someone has defined education as the preparation for the meeting of crises. Surely no one would now define physical education as the preparation for the meeting of physical crises. How wide is the content of physical education and how wide ought it to become? Perhaps few of us would agree very exactly on this question, but that we generally agree that there should be a widening of that content is suggested by the general topic of this meeting, "A Greater Physical Education."

In its earlier acceptance, the primary purpose of physical education was to prepare a sound body for a sound mind, the task of the educator being to develop the sound mind and that of the physical educator to develop the sound body.

Just as that conception of a sound mind has been too generally one wholly inadequate, one related too predominantly to so-called cultural mental processes and hardly at all to social relationships and ideals of living, so the conception of a sound body has been related altogether too generally to anatomy and physiology far more than to biology, psychology, sociology and ethics which are of even greater importance. A saving health implies more than a stored mind and a strong body. Just as in general education, the child has been too commonly regarded (or rather disregarded) from the standpoint of organized subject-matter, to the ignoring of the fact that he is a *process* far more than a *personal entity*, so in physical education, the child has too generally been considered from the standpoint of anatomy and physiology to the ignoring of the fact that he is an organism in the process of marvelously rapid biological, psychological, moral and social change.

If all this seems at the outset to imply too severe a strain upon the functions of physical education, it may be said that the relating of physical education to biology and psychology has already been recognized as necessary to the efficiency of teaching methods. Without this relating, physical education cannot do its complete work. The relating of physical education to sociology and ethics is necessary for the sake of general education because physical education offers the best, if not the only efficient, means of train-

* Read at the Third Annual Convention of the Middle West Society of Physical Education and Hygiene, Chicago, May 1, 1915.

ing in certain aspects of moral and social education. Without this relating, general education cannot do its complete work. It is not now so much a question of putting physical education into the curriculum, as of putting more of the curriculum into physical education.

My first suggestion then is that the whole field of genetic psychology, child study and adolescence is as pertinent to physical education as to any part of education. The peculiar opportunity of physical education is to meet, as can be done in no other way, the biological, developmental needs of immaturity. This naturally relates physical education to play which furnishes to the physical educator the chief opportunity for furthering the best organic development. Physical education must take its cue from the biological processes and interests of childhood and youth far more than from any anatomical or physiological unit of measure. This is said not so much with the idea of suggesting that play be included (as it generally is) in the curriculum of physical education as that physical education be included in the curriculum of play; for we have in play, in the nature of the case, the most natural and efficient, and at the same time historically the earliest and most common method of physical education.

Without entering at length into a discussion of the nature of play, it may be briefly stated that all plays and games are imitations or repetitions of types of activity that have been followed in the development of the race.* Further, it may be stated that the play of animals varies according to the structure of physical characteristics of the animals. The play of puppies and the play of kittens, for example, differ as the structure of their bodies and nervous systems differ. Dogs in their play run, chase and tear and cling with their teeth more than cats. Cats in their play stalk, scratch and strike with their paws more than dogs. These differences coincide with the differences both as to the structure and the experiences of the animals. Now some biologists tell us that the structure of the cat's paw and that of the dog have come about in each case through the differentiation of activities pursued by the ancestors of cats and dogs in previous generations. Function, they say, determined structure. To illustrate: the amoeba has four functions; namely, nutrition, locomotion, sensation, reproduction. Yet it has no special organs. It eats, digests and assimilates food, but it has no organs of digestion; it moves about, but it has no organs of locomotion; it responds to stimuli, but it has no nervous system; it reproduces its kind, but it has no organs of reproduction. As we go up the scale of life, we find these same four functions and no more. But there is a tendency in nature always to do things better and better, and special organs gradually developed. These biologists, therefore, formulated a

* See Chapter XXIV. by author, in Rapeer's "Educational Hygiene."

law ; namely, that function determined structure, that doing fashioned the organ that does the doing. For example, so they believe, the structure of the human hand and of that part of the nervous system controlling it, differ from the hand and the corresponding part of the nervous system of the ape, because of what the hand of man has done. The increased function of the human hand over that of the ape has determined its distinctive structure.

Thus the various and marvelously complex organs of the human body, according to this view, developed through differentiation of function. The law held good also, they thought, when function diminished. Structure then deteriorated as illustrated in the vestigial organs of the human body such as the notorious and nefarious appendix and the muscles that once moved the ears or nose.

There are other biologists, however, who believe that structure preceded rather than followed function. According to these (and they seem now to be having their inning) structure was determined in the germ plasma and not at all directly through exercise or experience. Their proposition is just the converse of the other; namely, structure determined function.

Now both these propositions are of great interest to the student of play and of physical education, for each suggests one and the same corollary ; namely, structure demands function. It does not matter materially to us whether nature first created an organ and then found a use for it, or whether it first found a use and then created a structure to meet it ; whether the ancestors of the warthog, for example, developed callosities on their knees by kneeling as they rooted for a living, or took that advantageous position because they were born with callosities on their knees. In either case, we come face to face with the fact that when in the course of generations, structure had been developed, or mutations in structure have come about, in each succeeding generation this inherited structure demands its appropriate function. During the long process of evolution the great complexity and interrelations of the members and organs of the human body and nervous system have been developed through function or through mutation (as the case may be) and as each organ evolves through the various stages of immaturity there is at every phase of its development, under the physiological condition of good nutrition and appropriate stimuli, an impulse, a passion, a vital need, for the same general kind of activity or function that determined (or accompanied) the corresponding structure in the species. Here, then, are the biological sources of play. Play is, as James said of instinct, the correlative of structure. Literally it is what children are made for. One need not say with Groos that the young play in order to prepare for future serious occupations, or with Hall that the young play in response to an inherited memory of past experiences of the race. One should rather say that play

is the normal functioning of structure in accord with its own peculiar nature and needs. Play is of the present rather than of the past or of the future. Its existence may be explained by the past, its nature may be a prophecy of the future, but play is essentially a manifestation of the present life and present nature and present needs of the organism, and there is neither biologically, physiologically nor anatomically any adequate substitute. Appropriate plays and games provide the exercises which are best suited to the present needs and powers of the developing organs, the exercises which best stimulate growth and structural change and which also best stimulate the vasomotor system and tend to bring about a condition of full nutrition. Moreover, it is interesting to note, as suggested above, that play is the conservative and not the radical element in systems of physical training. Of the five great systems of the world, the Grecian, the medieval, the British, the German system of Guts Muths and Jahn, and the Swedish system of Ling, the exercises of the first three were largely or wholly play, there was a large element of play in the fourth and not until the fifth and last was there a predominance of devised, dictated, formal exercises. In short, as education should be vastly more concerned with interests than with subject-matter, so physical education should be more concerned with activities than with exercises.

My second suggestion is that physical education should be related to sociology and ethics. No one denies to-day that in play and recreation we have certain opportunities for moral and social training, unequaled in other fields. In many most important respects, the physical educator is the only educator equipped for leadership. Physical education must recognize its responsibility in fields that are *primarily moral and social* and only incidentally physical.

The first great aim in education should be the conservation and socializing of the instincts. Physical education has opportunity for great social service especially through its relationship to competitive play, in this matter of the conservation of the instincts. This becomes apparent at once when we consider the fact that general education deals almost exclusively with the field of *social inheritance*, and that physical education, especially through play, deals largely with *organic heredity*. The school subjects of general education, literature, science, history, civics and mathematics are the accumulation of generations of social inheritance. The fundamental emotional backgrounds that determine the uses to which these inheritances will be put are matters of organic heredity. These are the instincts and innate tendencies like self-preservation, sociability, sympathy, imitation, pugnacity, competition, cooperation, sense of fairness, resentment, hero worship, loyalty and others. These instincts and innate tendencies obtain meager expression in the conventional subject-matter of the schools. If

the growing belief that all the instincts are fundamentally good and that training not crushing is the wiser course is justified, then physical education has an opportunity which is not equaled in other fields of regular education. Time does not permit adequate discussion of how far-reaching is the importance of the instincts and innate tendencies in moral and social education. They are the background of character. In physical education, especially in the field of competitive play, the instincts are trained, rationalized, under *stress*.* Take, for example, the instinct of pugnacity. In no other field can this primitive instinct be so keenly aroused and yet so efficiently directed towards biologically and sociologically higher and higher expression, until perseverance against difficulties, tenacity of purpose, will to overcome, insistence on the right, become a rule of life in moral relations and problems.

How the reverse is often true when the instincts are not directed but are allowed to run wild is suggested by every study made of boys' gangs. In "Boyhood and Lawlessness," the author, after speaking of the feuds among the West Side boys of New York, says: "Gang fighting, in fact, as practiced in this neighborhood, is conducive to neither manliness, honor, courage nor self-respect. The strength of the boy is the strength of the gang, and under its protection unspeakable horrors take place for which it is impossible to place responsibility. Rumors of boys being stabbed, shot, clubbed, maimed, and even killed are current everywhere, and there is good reason to believe that many of them are true. Such things are, of course, never mentioned to strangers, and residents learn of them only by chance conversation. The moment that any definite questions are asked the boys become reticent and change the subject. But there can be no doubt that many crimes are committed in these blocks which never reach the ears of the police, and that a considerable proportion of them is due to the boy and his gang."

"And so the word 'gang' here has grown to be synonymous with the worst side of boy life, and the group itself, which might in other surroundings and under other traditions be a positive civic asset, simply adds the irresponsibility of the mob to the recklessness of youth and becomes a force which turns West Side boyhood into cowards and savages. As a priest of one of the Roman Catholic churches said the other day, 'The social evil may be an important one, but the question in this neighborhood is that of the gangs.'"

My point is that the physical educator seems to be the only one of the regular school who is equipped to render the great and needed social service along the line of socializing the instincts. Why cannot this fighting instinct be recognized in such ways in

* See the author's "The Fighting Instinct: Its Place in Life," *Survey*, Sept., 1915.

education that it *will* function properly out of school even under our most difficult city conditions? This is the call to physical education. That much can be done is evidenced by the fact that play leaders in the streets have in instance after instance succeeded in getting hostile gangs to bury their feuds through friendly competitive games.

So also one might bring to our attention striking illustrations relative to other instincts and innate tendencies and show that here in the field of the instincts efficient moral training must take its beginning. As Professor Dewey says: "All conduct springs ultimately out of native instincts and impulses." And Professor Perry, "The self-preservative impulse of the simplest organism is the initial bias from which, by a continuous progression in the direction of the first intent, have sprung the service of mankind and the love of God." Thus we see that the demands of structure for function may be "original virtue" and not "original sin." There is a power within us which is ourselves that makes for righteousness. Virtues are rooted in instincts; vice is obstructed sequence, thwarted growth, arrested development; and through play, when that is rightly understood, man reaches his highest moral development. Even to ideals of sacrifice and voluntary endurance of pain, play answers, and is not, any more than happiness, conditioned always by a maximum of immediate pleasurable feelings. Paulson says: "The goal at which the will aims does not consist in a maximum of pleasurable feelings, but in the normal exercise of the vital functions for which the *species* is *predisposed*." The problem of ethics is to set forth in general outline the forms of life for which human nature is predisposed. The physical educator, in the field of play, holds the biological vantage ground to morality. There is no other who can take his place.

The divorce of the instincts from education has been the cause of barbaric sports in every age from that of the Coliseum in Rome to the present time, and the fact that the instincts have been recognized more and more in education is the reason why we are civilizing more and more our great sports. It is doubtful, however, if some of our social pastimes have progressed as far. Modern dancing, for example, is fraught with graver dangers perhaps than in any previous period. Here the physical educator has an opportunity also for great social service. The dance instructor in the schools should influence the dance ideals in all the community. It is only by knowing the language of the dance that the evils of dancing can be effectually checked. In the city of New York, in Manhattan Borough alone, it is estimated that 100,000 young people are dancing each week, sometimes under deplorable conditions and ideals. The genesis of the social dance was in religious expression and ceremony. From a form of prayer it has too often become a form of preying on the innocent by human

beasts. The dance has expressed four things: religion, drama, courtship, art. By making the dance speak consciously to the dancer its true language, is the only way to safeguard properly this beautiful and salutary form of self-expression. And this is not a girl problem only, it is a boy problem also. Many a society girl by a misuse of the language of the dance, after the dance is over, virtually, if unwittingly, turns a boy over to the professional street walker who has learned to wait outside of society's ball room. As a prominent physical educator said recently: "A man no longer has to go to the tenderloin, the tenderloin has come to society." No one else is so competent to solve the dance problem from the educational side as the physical educator who knows and heeds the language of the dance she teaches.

Another social service a greater physical education could render, is through the exercise and control of the emotions. General education is almost wholly divorced from the emotions, and conventional physical education is not far behind in this fault. It is a dangerous thing when education fails to develop the intellect with relation to the emotions or fails to exercise and control the emotions with relation to the intellect. Tragedies abound among highly educated and intelligent people because the intellect and the emotions have in education and life become habituated to unrelated action. The truly sane are those whose intellects and emotions function with relation to each other. Education, as was suggested above, must gain control and direction of instincts and emotions *under great stress*. Where except in physical education as related to play can the instincts and the emotions ("Instinctive reactions and emotional expressions shade imperceptibly into each other." James.), such as rivalry, sense of fairness, self-assertion, coöperation, anger, resentment, pugnacity, suggestibility, loyalty, sympathy, sacrifice, love, hate, desire, fear, jealousy, modesty, shame, sociability, secretiveness, hero worship, and others, which are the root sources of character and the virtues, be given free but appropriately related expression? Here, surely, education is a preparation for the meeting of crises, and nowhere else and in no way else can there be any adequate preparation for the meeting of moral crises than in such activities as habituate to right reaction under great emotional stress.

Every one here could doubtless, after a moment's thought, recall illustration after illustration to point what has just been said. To cite one example only: President Thwing relates how one of the best football players in Western Reserve came to him and said he must withdraw from the football team. His reason was that in the heat of the game he could not down the "bad blood" and was irresistibly tempted to some unsportsmanlike play against his opponent. A prominent social worker made the statement that he should not attend a certain important public conference because he said, if he did, he would be sure to say things

which he should not say. These men did not have too much feeling; too much anger; too much resentment; they did not have it properly trained. The advice to both was to get into the game and to temper, control and direct their pugnacity toward a higher and better expression.

Professor Simon N. Patten, in "Product and Climax," says:

"The present situation is unsatisfactory because we compromise between opposing schemes of morality instead of rigidly excluding the old and giving a firm adhesion to the new. Character, for example, is thought of as resistance, struggle and sacrifice on the one hand, and as activity, hope and faith on the other. We hold to ceremony as the basis of religion, and want the inspiration that comes only by breaking through established routine. We talk much of the sweet uses of adversity and hardship, and at the same time we desire good physical conditions and are eager to participate in movements eradicating the evils that made adversity seem sweet, hardship a necessity. We want our children to retain the plasticity of youth, and yet we believe in a disciplinary education and love to put them at difficult tasks having no end but rigidity of action and a narrower viewpoint. At the same breath we ask for heroes and demand more democracy. In all these and many other ways we want the restraint and discipline of the old, and yet are keenly desirous of the plasticity, efficiency and vigor of the new. There is no better way of making this clear than by giving a table that puts the contrasted concepts in parallel columns."

DEFICIT.

pain
will power
punishment
struggle
a strenuous life
revolution
discipline
renunciation
mystery
unworldliness
charity
sacrifice
fear
depression
humility
prayer
the marvelous
miracles
hero worship
heaven
salvation
atonement
hell
sin

SURPLUS.

pleasure
improved conditions
social standards
coöperation
a normal life
revelation
inspiration
achievement
science
foresight
thrift
generosity
good humor
hope
faith
praise
the dramatic
ideals
love of humanity
utopia
merit
regeneration
overwork
misery

Professor Patten suggests that, "If we have gone so far from the old scheme of salvation that no general return to it is possible, the only available plan of advance lies in the eradication of the 'deficit' elements in our morality and religion." But the deficit elements have been of great value in the evolution of the race and they cannot safely be, and ought not to be, eradicated. It is the physical educator who can reconcile the old moral standards with the new. In a greater physical education, in the field of play, there remains abundant opportunity for the voluntary, even eager, experience of pain, punishment, struggle, will power, discipline, renunciation, sacrifice, even fear, and other "deficit" elements, that alone can build deep and strong the foundations upon which the superstructure of the highest character can be built.

My third suggestion is that physical education should be related to the arts. If, as Dr. Wood defines it, physical education is the training of the body as the instrument of the mind, that perfect training must involve lines of motor expression that have large mental content.

The gravest defect of certain forms of physical training has been the divorce of thought and exercise. A perfect instrument of the mind must express thought or it by so far fails of being an instrument of the mind at all, if, indeed, it does not stultify the mind. All physical exercises should *express thought, emotion, ideal* and the keener the thought, the deeper the emotion, and the more beautiful the ideal, the more worthy the exercise. This is the reason why play surpasses formal exercise, and becomes, as Dr. Hill says, as much soul as body.

The arts afford motor activity with large mental content, quite necessary as a complement of much of the motor activity of conventional training. Among the Greeks, physical training was not so differentiated from the arts or from general educational ends as with us, and Guts Muths, the predecessor of Jahn, definitely included manual training among his "pedagogical physical exercises."

There has been much to show the relation of motor development to the mental development of the child. Development of larger motor areas, develop the region of brain control of both movement and thought. As Mosso says, it has been impossible to discover just how brain cells that control movement differ from brain cells that control thought. Now we would naturally infer that development of finer motor coördinations would make for greater fineness and subtilty of thinking. This certainly was the conclusion of Mosso in "Psychic Processes and Muscular Exercises." Physical training would not seem complete without exercises involving fine motor control such as we find in the constructive plays of children. If physical education involves only large muscle combinations, it may develop physical energy and reserve power of great value in sustaining the higher and more

subtle mental processes, but can hardly increase the quality and subtlety of those processes.

The same may be said of dramatic play as of constructive play. Dramatic play involves muscular coordination far finer and more subtle than is possible in formal dictated exercises. The expression of thought and emotion in dramatic action would seem indispensable in any system of physical education truly scientific.

In this connection there is much that might be said, but it would require another paper to treat the topic adequately. The whole field of emotional expression both directly and indirectly or dramatically is of supreme importance. Recreation for the people is needed not so much as a relief from overwork as a relief from under-expression. The *New York Times* said recently, "Curiously, as soon as men get loose they go and get tight." This expresses facetiously the truth that man will break away from humdrum, and suggests that education and, particularly, physical education, which holds a natural vantage ground to the direction and control of the instincts and emotions, should conscientiously accept this great social responsibility of safeguarding emotional expression. When physical education allies itself to play and recreation, it finds abundant opportunity for activity in both these fields.

To sum up: "A Greater Physical Education" will be related to biology, psychology, sociology, and ethics, as truly as to anatomy and physiology. A "Greater Physical Education" will recognize the place of constructive and dramatic play in relation to a finer bodily control and greater subtlety of thinking. "A Greater Physical Education" will accept its opportunity for great social service through:

1. The conservation and socializing of the instincts.
2. The training and control of the emotions.
3. The development and education of the powers of expression.

No attempt has been made to suggest into what broad fields of activity, such as athletics, recreation, and pageantry, physical education may lead and how it will operate. The purpose will have been attained if the general educational and great social opportunity and responsibility of the physical educator have been clearly established. As Job said to his comforters, "Surely, ye are the people," one may say to physical trainers, "Surely, ye are the educators."

THE RELATION OF MOTOR ACTIVITY TO HEALTH AND EDUCATION.*

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Two contradictory views of the human body have at various times profoundly influenced the attitude of educators toward its care and training. One, which we may term the *ascetic*, reflects the dualistic philosophy of Oriental religions. Men believed that evil inheres in matter, of whatever sort, while mind or spirit is essentially divine and pure; and it followed as an inevitable corollary that soul and body must wage perpetual warfare on each other. Through the Alexandrian school of philosophy this tenet found its way into southern Europe very early in the Christian era, and furthered by reaction from the extreme luxury and self-indulgence which characterized the decadent pagan society of the Roman Empire, and by the effects of persecution, which led to a glorification of martyrdom and caused pain and torment to be considered meritorious of themselves, it gave its impress to Christianity. Asceticism thus became a part of the accepted teaching of the Church and the practice of a large proportion of her leaders and adherents. Mortification of the body took on all the dignity of a religious exercise, and the self-torture of the hermit and the monk served at the same time as a means and measure of spiritual growth.

In the monastery and cathedral schools, the chief seats of learning from the sixth till the twelfth century, and in the medieval universities of a later period, the care and training of the body had no place. Provision for lawful amusements was rarely made, and harmless attempts at pleasure were not unfrequently regarded with a degree of hostility merited only by actual vice and crime. Somewhat similar appears to have been the condition in our own colleges during the generation that preceded the Civil War.

According to the second view, the *biologic* or *physiologic*, the body is a machine with which man does his work in the world. Care and training are necessary that it may be perfect in all its parts at maturity, and handled skilfully and economically. Huxley stated the idea in a nutshell in an address to the South London Working Men's College, in 1868, when he began his definition of a liberally educated man by saying that he must have been "so trained in youth that his body is the ready servant of his

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will, and does with ease and pleasure all the work that, as a mechanism, it is capable of." John Locke, one of the commanding figures in the centuries of transition from medieval to modern methods of thought, had grasped the same idea nearly two hundred years before. Discussing the hygiene of childhood, in his "Thoughts on Education" (1693), he advises parents to "keep the body in strength and vigor, so that it may be able to obey and execute the orders of the mind. . . . A sound mind in a sound body is a short but full description of a happy state in this world: he that has these two has little more to wish for; and he that wants either of them will be but little the better for anything else. . . . He whose mind directs not wisely will never take the right way; and he whose body is crazy and feeble will never be able to advance in it." In Book I of Rousseau's "Emile," too, we are told: "The body must needs be vigorous in order to obey the soul: a good servant ought to be robust. . . . The weaker the body, the more it commands; the stronger it is, the better it obeys."

I doubt whether biology can furnish a stronger argument for physical training than that which is yielded by a study of the part played by motor activity in the evolution of higher forms of animal life, and of the way in which it has led to the type of body which man now possesses. Professor J. M. Tyler of Amherst College, in his most suggestive book on "Growth and Education," sums up the facts as follows: "The protozoa developed a single cell or grouped these cells in colonies with no tissues or true organs. During the zoöphytic stage the digestive and reproductive organs were started. Worms introduced muscular locomotion. This step in advance was accompanied by the development of the respiratory, excretory, and circulatory organs, represented in our bodies by lungs, kidneys, and heart and blood-vessels. Swifter locomotion called forth the higher sense-organs, which reacted on the foremost ganglion of the body, and stimulated its development into a brain. At the same time the muscles were doing a similar work toward the development of a spinal marrow, though brain and spinal marrow do not actually appear until the time of vertebrates. The development of the appendages called out the cerebellum; and their higher use in mammals developed Meynert's projection area in the cortex, which had arisen in consequence of the greater use of the sense of smell. The cortex develops steadily through mammals. The association areas become large in arboreal mammals, and culminate as the mental centers in man. The development of the heavy fundamental muscles necessitated and stimulated the development of our vital organs: heart, lungs, and kidneys. These form a closely related group. Muscular exercise is still necessary for the development and maintenance of these organs in the individual man or child. They respond to muscular stimuli as they never do to

those of the brain. . . . Mental exercise of a logical sort has added only the finishing touches to the development of the brain. It originated as a switchboard between sensory stimuli and muscular movement. It is still a part of the great neuromuscular system. Brain and muscle are never divorced in the action of healthy higher animals or of healthy men. They should not be divorced in the education of the child."

The muscular system, then, as Professor Tyler says, "must be of far greater importance and have far larger latent capacities than we have usually supposed. It is the strategic center from and through which we can reach, exercise, and strengthen all the organs essential to life, but which are beyond the direct control of the will." It is also "the key to the development of the brain. . . . Nervous development followed the increase of locomotion and increased use of the sense-organs, especially of the eyes. Arboreal life and the use of the hand were exceedingly important factors in the development of the cortex." In the case of man himself, physical exertion has been an almost universal condition of existence, down to recent times, and to it we largely owe our present type of body. As Dr. Gulick puts it, "A biologist, having brought to him a human body and being asked for a statement of its functions from an examination of the structure, would say that both in form and function the organism must have been adapted to a life of considerable muscular exertion; that the lungs as well as the heart indicated far more capacity than would be needed for a life exclusively or even largely sedentary; and finally, that the nervous system was designed predominantly for the initiation or control of muscular movements. . . . No argument is necessary to the evolutionist to show that the necessity for muscular exercise has been constant and predominant throughout the whole history of the life of the species; that it has been so constant and so large a factor in adjustment to the total environment as to have had a chief share in determining the character of the organism itself; and that those conditions which have been decisive in determining the form and functions of the organism are the conditions in which it functionates the best."

This biologic view of the body as a servant of the mind, and the recognition of motor activity as fundamental in education, have led to the general introduction of courses in hygiene and the rudiments of human physiology into the curriculum of our schools and colleges, and to widespread attempts to supply facilities for bodily exercise, with more or less provision of expert oversight and systematic instruction. Such steps mark a noteworthy advance in the right direction, and yet they indicate only a partial grasp of the real significance and purpose of physical education. For there is still a third view of the relation of body and mind, the *psychophysic*, which finds increasingly clear and forceful expression in the recent home and foreign literature of physical

training, particularly that relating to playgrounds and athletic sports, and which suggests that hitherto we have barely crossed the threshold of opportunity and obligation. Montaigne foreshadowed it in chapter 25 of the "Essays" (1580), when he says: "Our very exercises and recreations, running, wrestling, music, dancing, hunting, riding, and fencing, will prove to be a good part of our study. . . . It is not a soul, it is not a body, that we are training up; it is a man, and we ought not to divide him into two parts." In a word, the whole man is reached through his motor activities, and is involved in them. Mind and body are interdependent, and what we have been calling physical training may, if properly applied, make direct and most important contributions to the intellectual, social, and moral progress of the child and youth.

It is time that we adopted a new definition of physical education. The term has been used, as in Spencer's "Education," to include the entire personal hygiene of childhood and youth. Others have understood by it the systematic exercise of the neuromuscular mechanism for the correction of defects or deformities, for the restoration or preservation of health, and to secure ready control of the human machine and right motor habits—a view which makes the physical results the chief or only ones. A better usage, and one more in conformity with the present conception of man's nature as a unit, is that which regards his motor activities as a means of influencing for good the entire individual—in mind and character as well as in body; it employs the word *physical* to denote the means, and not the end.

From the time of the Athenian philosophers down to the present day men have always realized, more or less consciously, the truth embodied in such a definition. The Greek gymnastics—contests in wrestling, running, jumping, throwing the spear and the discus—were intended to develop the body and the *will*. At the Olympic and other pan-Hellenic games spectators witnessed striking exhibitions of human strength, skill, speed, and endurance; but also of concentrated and intense effort, resoluteness, alertness, presence of mind, resourcefulness, steadfastness, and perseverance. For the Roman youth, at least during the years of the Republic, when every citizen except those of the lowest class was liable to military service for thirty years after his entrance into man's estate, the life of the camp, the march, and the battlefield promoted not only physical hardihood and skill in personal combat, but self-mastery, subordination, physical and moral courage, and a spirit of loyalty and coöperation. The ascetic conception of the relation of body and mind or soul, while it was fundamentally wrong in that it made the former the enemy of the latter, yet recognized the effects of *intemperate* yielding to

bodily promptings upon the life of the spirit; and it is worth noting that not only did it lead to broken health, such as embittered the lives of some of the greatest among the Church fathers, but long-continued austerities and overwrought emotions produced a disordered nervous system and supplied all the conditions for hallucination. Lecky has also called attention to certain moral qualities that suffered from the prevailing conception of excellence. "What may be called a strong animal nature"—he says, "a nature, that is, in which the passions are in vigorous, and at the same time healthy action, is that in which we should most naturally expect to find good humor, frankness, generosity, active courage, sanguine energy, buoyancy of temper. [These] are much more rarely found, either in natures that are essentially feeble or effeminate, or in natures that have been artificially emasculated by penances, distorted from their original tendency, and habitually held under severe control." But the hermit of early Catholic legends was gradually displaced as a popular hero by the knight, and military Christianity, as typified in the three orders of soldier-monks which had their origin in the twelfth century, could not fail to weaken the hold of the ascetic ideal. The training of the knight stood in sharp contrast to the education imparted in the monastery schools, and the practices of chivalry were a schooling in knightly *virtues*, as well as in horsemanship and the adroit use of weapons.

The popular gymnastic societies (*Turnvereine*) of Germany, which now number over eleven thousand and have a total enrolment of more than a million men, are a direct result of the work of Friedrich Ludwig Jahn in the years 1810-1818, and reflect his spirit and aims. Such a thing as a formal training in gymnastics was foreign to his purpose. The essential feature was the active, wholesome, common life in the open air, and the opportunity to promote harmony and to kindle public spirit. Many a German teacher who had fought in Lützow's or some other volunteer corps in the War of Liberation (1813), and joined in the stirring songs of Karl Theodor Körner about the campfire or on the march, went back to his classroom filled with a desire to see developed in his young charges a stronger patriotism, a simpler, more vigorous, and more manly type of life, less regard for distinctions of rank and wealth, a spirit of mutual helpfulness, and a willingness to unite with others for the common welfare. Jahn's *Turnen* was intended to secure these very ends and had demonstrated its power to do so, and hence the remarkable spread of outdoor gymnasia of the Berlin type throughout Prussia and in other German states in the years 1814-1818. Ling, who opened in 1814 the Royal Central Institute of Gymnastics in Stockholm, under the patronage of the king of Sweden, and before his death twenty-five years later had laid the foundation of Swedish military, medical, and school gymnastics, was also elected to a seat

in the Swedish Academy as a tribute to his literary works. These deal with the mythology and ancient legendary history of the Scandinavian races, and with momentous epochs in Swedish history. And yet Ling's was not a double life, for whether teaching or writing he sought to revive in his countrymen the old Norse vigor of body and character, so that they might meet and thrust back the enemies who threatened from every side. Spiess, the father of school gymnastics in Germany, in his attempt to organize the gymnastic material and incorporate physical training in the curriculum as an integral factor, realized that the school should concern itself with the whole life of the young, and that gymnastics was a means of education, to be treated on an equality with other branches of instruction and discipline.

In an oration delivered before the Phi Beta Kappa society of Harvard University in 1893, President Francis A. Walker called attention to the fact that "the favorite athletics of to-day are, in great measure, such as call for more than mere strength and swiftness. They demand also courage, coolness, steadiness of nerve, quickness of apprehension, resourcefulness, self-knowledge, self-reliance. Further still, they often demand of the contestants the ability to work with others, power of combination, readiness to subordinate selfish impulses, personal desires, and even individual credit to a common end. These are all qualities useful in any profession; in some professions they are of high value; and it cannot be gainsaid that it is the normal effect of certain kinds of athletic sports to develop these qualities among the contestants, as well as to afford impressive examples to the minds of the spectators. . . . It is unquestionably the opinion of most educated Englishmen that the cultivation of [football] in the public schools of that country has had not a little to do with the courage, address, and energy with which the graduates of Rugby, Eton, and Harrow have made their way through dangers and over difficulties in all quarters of the globe." Well might Browning make Rabbi Ben Ezra exclaim: "Nor soul helps flesh more, now, than flesh helps soul!" and again, "Thy body at its best, How far can that project thy soul on its lone way!"

Discarding, then, the ascetic view as no longer tenable, and accepting both the biologic and the psychophysis as together supplying the foundation on which our argument is to be built up, let us next remind ourselves that phenomenal changes occurring within the memory of our own parents have largely robbed the home and daily occupations of their power to furnish physical activity, and have made it necessary for the community to meet the need through the agency of the school and the playground. As late as the middle of the last century it was still true that the farm, and in the town the home with its "chores" about house, barn, yard, and garden provided for a large majority of the young a motor training that was in many respects ideal. But

now, with an abruptness of transition that is fairly startling, the massing of population in cities and the substitution of machinery for human muscle have practically banished these factors in education from the lives of all but a few. To quote again from Professor Tyler: "It is a fact beyond all doubt that a very large fraction of our population has exchanged rural for urban life during the last two generations, and also that as fast as we can we are exchanging a life of muscular effort in the open air for one of brain-work indoors. We avoid manual labor. The farms are deserted; store, office, and desk are crowded. The average child needs far more outdoor exercise to-day than a century ago; he actually has far less than used to be furnished by the farm, and in the city he has very little, if any at all. He begins going to school much younger, and the school year is almost three times as long. A hundred years ago the school could rightly lay all its emphasis on books and learning; home and farm insured physical health and vigor, all kinds of manual training, ingenuity, perseverance, and efficiency."

The community is thus confronted with a new problem, one which hitherto the family has for the most part been left to solve for itself. It must not only safeguard the bodily welfare of the child, under the changed conditions, and in a variety of ways undreamed of by our fathers; it must also take over the task of providing the growing boy and girl and the adolescent with an amount and kind of motor training which will be sufficient for his needs at every stage of growth and development. The gymnasium and the playground have become a necessary part of the educational plant, and the school is called upon to extend its curriculum and enlarge its powers in order to incorporate and control these educational agencies. Its task is a four-fold one: first, to conserve the health of the individual pupil and the group; second, to give instruction in the essentials of personal, domestic, and public hygiene; third, to provide systematic and progressive physical training throughout all but the earlier years; and fourth, to organize and supervise the activities of the playground and the athletic field.

The first and second of these duties need not enter into our present discussion. As to the reasons for systematic and progressive physical training throughout the greater part of the school course, and regarding the manner of carrying out such a comprehensive plan, there is still a surprising confusion of ideas, even among men who have made a professional study of the subject and who occupy conspicuous positions of leadership. Play, games, and athletic sports, although their value can hardly be exaggerated, are no more able to take the place of formal gymnastics than are the popular magazine, the picture show, and the public library to serve as substitutes for the orderly discipline of

the school and college. There are drooping heads and shoulders, bowed backs, and flat chests which must be made to yield to carefully chosen corrective exercises. The rudiments of neuromuscular control must be acquired through frequent practice of varied forms of movement graded according to difficulty and advancing from the simple to the complex. The confinement of the classroom must be offset by vigorous use of the large, fundamental groups of muscles, those of the shoulders, trunk, and legs, whose contractions stimulate the activity of heart, lungs and skin. The foundations of self-reliance, courage, and decision of character must be laid by means of exercises that call for the overcoming of some difficulty, or that present the element of danger involved in hanging and swinging by the arms and in jumping and vaulting over obstacles.

The almost endless number and variety of such exercises make it possible to meet the needs of the most backward and to progress by easy gradations to any desired degree of proficiency. Character and will-training, no less than the purely physical effects, should be sought from the start. Hanging and climbing exercises have played an important part in bringing the human thorax to its present shape and they are indispensable factors in promoting its due development in every individual, giving him at the same time valuable training in self-confidence and steadiness of nerve. Exercises in jumping and vaulting are a veritable school of courage. It follows, then, that a fully equipped gymnasium, indoors and out, is needed for all but the most rudimentary and meager physical training. Every pupil must be reached by this orderly discipline, and economy of time and space requires that the system and method be most carefully elaborated. Late fall, winter, and early spring, when the playground is usually deserted, are seasons when the need for regular exercise is greatest.

But the hour or so a day devoted to formal physical training is far from supplying all the motor activity required for the normal development of the child and youth. It is desirable that a still longer time be spent on the playground and athletic field. Here organization and supervision are again demanded, but only with the object of giving each individual a chance to play and of preventing the few from usurping facilities that all should enjoy. Freedom for self-expression and self-control, subject only to the rules of the game and the dictates of true sportsmanship, are the very essence of play. Social and moral training are chief among its benefits, and the teacher's business is to suggest and lead, not to dictate or compel. The last ten or fifteen years have witnessed such a rapid spread of interest in games and athletic sports and such a growing appreciation of their educational value, and the regulation of the latter in schools and colleges has been

the topic of so much discussion, that further treatment here is unnecessary. It seems to me that in our enthusiasm for such activities, and may I add folk- and artistic dancing, as well, we are in danger of forgetting or neglecting other agencies in physical education which are no less essential.

In this connection it is well to note the course of events in Europe. For fifty years or more systematic physical training has formed a regular part of primary and secondary education in most continental countries, and in Denmark and Sweden the beginnings date back a full century. In the United States, on the contrary, the movement to incorporate such discipline in the school system is still in its infancy. The first serious attempts on any large scale, if we omit a few sporadic cases, fall in the second half of the decade 1880-1890, and we cannot be said to have advanced as yet beyond the experimental stage. The types or systems found in Europe, if we except the popular gymnastic society, which affects directly adults and older youths only, can all be reduced to three elemental forms—German school gymnastics, Swedish school gymnastics, and the games and sports of the English public schools and universities. To the English or American visitor on the Continent the most striking fact is the universal inclusion of gymnastics as a part of the curriculum, in elementary and higher schools alike, and the provision of fully equipped indoor and outdoor gymnasias, at least in the case of the larger cities.

As might be expected, the three types of physical training, arising independently, have begun to react upon each other, and have been copied in more or less modified and composite form by the educational authorities of other countries. Books on education in England published by Paschal Grousset and Baron Pierre de Coubertin in the decade 1880-1890 exerted a profound influence on French thought and directed attention to the great importance of vigorous open-air exercise. Since 1891 Germany has had a Central Committee for Promoting Active Games and Athletic Sports, which has conducted a well-organized and successful campaign. The Scandinavian countries have been similarly affected, and there are corresponding societies in both Norway and Sweden. On the other hand, the spread of the Swedish system of school gymnastics in the last few decades has been equally noteworthy. It has won the attention and modified the practice of German and Swiss teachers, made considerable headway in France and Belgium, and almost entirely replaced the older *Nachtegall* gymnastics in Denmark. England has been slow to adopt formal training, but now the army and navy manuals and the *Syllabus* of the Board of Education are based upon the Swedish system. It has also been introduced as a general requirement at Eton and Rugby, to supplement the effects

of outdoor sports, and Eton, Harrow, Rugby, and Winchester, at least, among the public schools, now possess gymnasia in addition to their extensive playgrounds.

Thus reason and experience both lead to the conclusion that neither the gymnasium nor the playground is alone sufficient, but that each is an essential part in a complete scheme of physical education.

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Am. Phys. Ed. Rev.—American Physical Education Review. \$3.00. (M, nine issues). 93 Westford Ave., Springfield, Mass.
Arch. Int. Med.—Archives of Internal Medicine.
Child.—The Child. \$5.25. (M). G. E. Stechert & Co., 151-155 W. 25th St., New York.
Good Health. \$1.00. (M). 456 4th Ave., New York.

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EDITORIAL.

MILITARY TRAINING VS. PHYSICAL EDUCATION IN SCHOOL AND COLLEGE.

The federal government and various states are considering carefully the problem of military preparedness in the light of the present world war. It is time the federal and state government gave thought to this problem in a broad constructive way. What is the problem? What are the needs?

Some military authorities feel that recent wars, the present one in particular, have rendered obsolete the present military formations and the drill in the manual of arms. The chief qualities demanded in modern warfare are the ability to make forced marches following railway travel, to run, to dig trenches, to get about in the dark, to shoot straight, to handle machinery, to sleep under adverse mental and physical surroundings, to subsist on concentrated and canned foods. None of these qualities depends upon skill in the manual of arms or upon the old military formations which were planned for operation on the plains of Europe before the development of modern artillery, the machine gun or the aeroplane. The modern developments with the federal and state troops have tended away from the restricted movements of military marching and the use of the manual of arms toward extended maneuvers of the army in camp life. This more vigorous activity has been supplemented by an increasing amount of time devoted to physical education. This has been true in the regular army, and particularly true at West Point and Annapolis where the officers are trained. These officers' schools have a thorough course in physical education in addition to their military training. The military training given in the schools and colleges has been of the restricted kind, largely elementary tactics and manual of arms. The gun too often given the college man has been an old model in which he could take little pride of possession. With high school boys it has been an inferior weapon or a wooden gun, much to the disgust of the boy.

According to the testimony of Capt. Walter L. Bouvé of the Massachusetts militia, at the hearing before the Massachusetts Military Commission on October 20, this procedure did not aid in securing recruits for the militia but was an actual hindrance to their enlistment. Speaking of high school militia, he testified that the boys became so disgusted with the monotonous drill in elementary marching and in the manual of arms that they refrained from enlisting later.

Fundamental needs of a soldier largely the same as other men.

The reorganization of the army demands many of the qualities called for in the gymnasium, on the athletic field and in such activities as the boy scouts. The large number of rejections of recruits indicates the deep fundamental need for men with more vigorous bodies. The report of Dr. R. W. Corwin, chairman of the health committee of the American Medical Association in 1913, which shows that insanity is increasing more than twice as fast as the population, that heart disease is 57 per cent more prevalent than fifty years ago and kidney disease 137 per cent more prevalent, indicates the fundamental character of the problem.

The basal problem is the vitality of the young men, not the problem of high school boys' learning tactics.

The high schools have not yet accepted the rudiments of military preparedness which are *physical fitness*. The essentials of military preparedness are: first, physical fitness for a soldier; second, vocational skill in manufacturing the munitions of war. These ends may be secured first through as thorough courses in physical education as in intellectual education. Men are being rejected in considerable numbers, not because they are ignorant, but because they have inferior bodies. The high schools have preëmpted the field of physical education for adolescents without occupying it for either boys or girls. The cities have given them the equipment in many cases, while the board of education has administratively made it impossible to use it in ways vigorously related to physical efficiency. The time allowed for exercise is too short. Usually bathing is prevented by the time schedule. The inability to bathe means the practical exclusion of most of the fundamental movements related to health. The play field and swimming pool should be added to the equipment and used regularly by all the pupils during school hours, and opportunity given for use after school. The school day might well be lengthened to give time for health activities. If this is impossible, time should be taken from other studies. Intellectual and bodily education must go hand in hand.

Military preparedness and the virility of the people both require that larger emphasis be given to health education and health activities in the public school and in college. If the present interest in military preparedness could stimulate the public conscience to such an extent that every high school would secure adequate play fields, gymnasiums, baths and swimming pools, with opportunity to use them, we might look forward with more confidence and find later fewer rejections of recruits. If, in addition to this, every state university and every public high school had

as a regular part of its graduation requirements that each male student must spend at least one month of his senior year in an army camp, established especially for his military training, we might look forward to increased virility of our men and better preparedness for war.

NEWS NOTES.**NEW MEMBERS.**

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HISTORY OF PHYSICAL TRAINING IN VASSAR COLLEGE.

An interesting monograph describing physical training at Vassar College from 1865 to 1915 has just appeared. The author, Harriet Isabel Ballentine, has made a very attractive contribution to physical training in women's colleges. The his-

tory of physical training in each of the women's colleges should be similarly written. The history of physical training at Mount Holyoke was presented by Persis H. McCurdy in the REVIEW for March, 1909.

MILITARY DRILL AND PHYSICAL EDUCATION.

GEORGE W. EHLE, C. E., PROFESSOR AND DIRECTOR OF PHYSICAL EDUCATION, UNIVERSITY OF WISCONSIN.

FOREWORD.—The writer was a member of a boys' military company at the age of thirteen. He was a cadet, drilling daily, for three years and an instructor for one year at the Pennsylvania Military College. For two summers he conducted a boys' military company at Lake Chautauqua Assembly. For five years he has served the University of Wisconsin, where military drill twice a week for two years is required of all male students.

"Be prepared," the Scout watchword, should become the watchword of the nation. The cry of the extreme pacifist that "preparedness" means the development of the spirit of aggression, and leads directly to war, is as false as the idea that the boy who learns to box and wrestle or to play football thereby becomes inevitably a braggart and a bully; and the converse, that "unpreparedness," national "out of condition," will be a protection against the bully of the world, is equally fallacious. In the warfare of the evil upon the good there is no consideration given upon the basis either of sex, age or physical condition. The bully fears and avoids the man of real power. He dominates and terrorizes the weak.

Influential and prominent advocates of preparedness, carried away by their feelings and influenced by the superficial and concrete, propose to introduce military drill into all public schools and colleges as the chief means of preparing growing boys and youths for possible future military service. Almost without exception they back up the suggestion with the argument that such drill will also be valuable as physical education. By MILITARY DRILL these advocates mean INFANTRY DRILL TACTICS—marching and the manual of arms. These are essentials in the school of the soldier, but they are only of minor importance. They can be thoroughly learned, in less than a month, for all practical military purposes, by any bright boy strong enough to handle a toy gun. From the standpoint of physical education, their value on the one hand is not only negligible, for the same physical results that are of any value at all can be secured in better ways; but on the other hand, the formal, restricted movements of the manual of arms, combined with the relatively long periods of holding the rifle in one position while drilling at com-

pany or regimental evolutions, are positively injurious to the growing and developing boy.

Military "drill" is a sound-deadening, enthusiasm-killing, contempt-developing treadmill. It is worse than gymnastic "drill." Primarily, military marching should be but for the method for large bodies of people of going to and from work in the most expeditious manner with the least confusion and effort. The manual of arms is only a method of shifting the rifle from one uncomfortable position to another, except for certain ceremonial movements.

Preparedness involves on the one hand material things—arms, munitions, fortifications and all that they imply. On the other hand, and of infinitely greater importance, is the "man behind the gun." Preparedness on his part involves the acquisition of military technique, the art and science of the soldier—eventually, but primarily and fundamentally of vastly greater significance, the possession of vitality, endurance, integrity of structure and function of every organ, alertness, bodily skill, self-control, hardihood, courage, in other words, the fullest development of the physical, mental and emotional powers, the result of real physical education.

If we think of military preparedness in these terms, then without doubt military training should begin with the beginning of school life. Let us not confound drill with training nor substitute "military drill" for physical education. Let us profit by the example of other nations and peoples who, in similar but not less warlike times as well as in our own day, realized that physical efficiency at maturity was a matter of breeding and training throughout the growing and developing period—childhood and youth.

In the curriculum of primitive man, physical education went hand in hand with vocational training. Skill of body, strength, fearlessness, courage, hardihood, endurance, were definite objects of systematic methods of education. Father and grandfather were the boy's teachers, and from his earliest years constant attention was paid to running, jumping, swimming, riding, wrestling, throwing and shooting, together with "hardening" practices, including daily bathing in cold water, sleeping without shelter, going without food.

Among the Athenians in the Golden Age of Greece, nearly half the time of the boy in school, from his sixth to his eighteenth year, was given to various forms of physical activity, with the definite aim of physical education—running, leaping, wrestling, boxing, driving, riding, throwing, shooting, fencing. Not until his eighteenth year was he required to begin military drill and to learn military technique, and two years sufficed to make a warrior of him.

In our day, little Switzerland has learned the lesson of having her entire male population trained to a high degree of physical

efficiency, fit as warriors, yet without militarism and without in any way detracting from or interfering with the course of elementary, secondary, or higher education or turning her schools and universities into military academies.

Education is compulsory up to fifteen and systematic physical training forms a large part of the curriculum in all schools from the beginning. From eleven to sixteen a boy may join a *volunteer* cadet corps, in which the chief activity is shooting at a target with a real rifle. From sixteen to twenty he *may* join a volunteer military organization, in which the chief emphasis is placed upon gymnastics and *shooting*. At twenty he must take his examination for the army—medical, literary, gymnastic, running. The unfit are rejected and must pay a special tax.

The inadequacy of "military drill" as a means of physical education is emphasized by the example of West Point and Annapolis, where systems of physical exercise of a most vigorous sort are required of all cadets throughout their four years of training.

Happy the day when wisdom prevails in the halls of Congress and state legislatures and we see a military policy adopted, based upon preparedness of America's boys *and girls*, and enforced in every educational institution in the land.

With more time given every day (not less than one hour) to fundamental education—vigorous physical activity, including athletics and games of every sort, supplemented by formal gymnastics where necessary—and less time to the fads and frills of literary training, children and youth will be healthier and happier, school diseases will disappear, moral training in daily conduct will become possible, character will be built up and a new race of virile men and women will be developed, to whom the acquisition of military technique will be simple and easy.

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Attendance at demonstrations,	1500

W. J. MONILAW.

AMERICAN COLLEGE OF PHYSICAL EDUCATION.

SUMMER SESSION.

The summer course opened July 1 and closed August 5. The attendance was three times as large as the previous year. Outings were planned to places of interest on Saturday afternoons and social dances held on Tuesday evenings. The summer school picnic took place July 30 at Jackson Park. The afternoon of August 5, an informal discussion on the work of the school was held, followed by an informal program and refreshments.

WINTER SESSION.

The winter session opened September 14, 1915, with about fifty new students enrolled. The college has opened its dormitory for women within a block and a half from the school.

LIBERTY C. ROESSLER,
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BOOK REVIEWS.

DIVORCING LADY NICOTINE. By *Henry Beach Needham*. Published by *Forbes & Co.*, Chicago. 16mo. 70 pp. Price 35 cents.

This little racily written monograph purports to be the experience of a journalist who from excessive smoking was short-winded, had stomach trouble and insomnia. He was brought to his senses by the serious attitude of a life insurance medical examiner, with the result that he decided to "quit," despite the advice of his friends and even the wishes of his wife.

The graphic description of the struggles of the first few days of his sacrifice are both amusing and pathetic, but the final report, improved health, clearer head, and greater enjoyment of life in general, is a powerful argument even to the supposedly confirmed smoker to "quit" before he has to.—*G. B. A.*

MY SYSTEM. By *J. P. Muller*. Published by *David McKay*, Philadelphia. 1915. 8vo. 4 vols. \$1 each.

These four volumes represent different aspects of the so-called "Muller System," which might be characterized by a special emphasis which he lays upon breathing and the relationship which he claims should exist between breathing and exercise. He divides his work into the following parts:

Part I. "My System." This is based upon the assumption that the chief bodily functions to promote are those of the skin, lungs and digestive system, and of minor importance are diet, dress, sleep, moderation in smoking, etc. He follows with a series of eighteen exercises which include rubbing and breathing as means for promoting health on the basis which he has outlined.

Part II. "My Breathing System" claims that the so-called natural breathing is not always correct, and that breathing needs to be taught. Among the mistakes made are, he claims, those of holding the breath after deep inhalation, also the rapidity of exhalation. The following chapters deal with the methods of breathing in relation to exercise, with hints for athletes, singers, etc.

Part III. "My System for Children" emphasizes the necessity for protection against undue strain, also for moderation in all exercise, and then follows the eight muscular exercises which he advocates. There are a few games, and again rubbing is strongly advocated.

Part IV. "My System for Ladies" gives a series of bodily exercises with special emphasis upon rubbing in relation to exercise. He discourses upon the ideals of beauty and completes with testimonial letters from women who have been helped by his methods.

In general the work commends itself as being rational and worthy of being ranked as scientific, but one cannot see why he or anyone else should lay claim to a "system" which is being used by many intelligent directors to-day.—*G. B. A.*

PESTALOZZI, HIS LIFE AND WORK. By *J. A. Green*. Published by *Warwick & York, Inc.*, Baltimore. 12mo. 393 pp. Price \$1.40.

This book aims at giving a clear account of both the life and work of one of the most prominent of educational reformers. Of the three parts into which the text is divided, the first gives his biography, including a complete translation of what is known as Pestalozzi's "diary." The second part presents a critical consideration of his underlying educational doctrines, of which several have come into reëmphasis lately. He advocates education according to nature and laid special stress upon what he terms as "spontaneity," that is, the education of the powers in the order in which they naturally developed, and equally important did he regard "harmony," which was the balance between the moral or inner nature and the intellectual powers.

While advocating physical exercise he scorned that which was based upon dancing, fencing, vaulting, etc., since these were not related definitely to the practical things of life. The means used for physical education, should, according to him, be those which prepared the child for the physical conditions of his existence and which enabled him to toil or work as his situation in life might require.

The third part consists of extracts and passages translated from his writing as well as from works of others who wrote concerning Pestalozzi, and the final chapter consists of a bibliography of Pestalozzi's educational writings, which is the most complete yet published.—*G. B. A.*

AMERICAN PHYSICAL EDUCATION REVIEW

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JAMES HUFF MCCURDY, M.D., Editor

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AMERICAN PHYSICAL EDUCATION REVIEW

JAMES HUFF MCCURDY, M. D., *Editor*

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THE PHYSICAL TRAINING OF THE NEW BRITISH ARMIES.

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EDUCATION IN THE UNIVERSITY OF PENNSYLVANIA,
AND PRESIDENT OF THE AMERICAN PHYSICAL
EDUCATION ASSOCIATION.

In 1867 Archibald Maclaren, at Major Hammersley's suggestion, took to his gymnasium at Oxford Sergeants Rafferty, Kearney, Flanagan, Riley, Bartlett, Smith, Jackson, Tarbottom, Beer, Cox, Steele, and Sheppard, and gave them the course so graphically described in his classic work on physical education. The group-picture, a little faded, still hangs on the wall of the Aldershot Gymnasium and their neatly tabulated measurements, copied by hand and signed by him on parchment, can still be seen in the book of their photographs.

It is a far cry from this small beginning; and the way has been through bypaths of Sandowism and other fads to the system that required a four months' course in Swedish gymnastics, gymnastic games, and clearing of obstacles, designed for the training of sergeant instructors and embodied in the official manual (1908).

When the great war broke out in August, 1914, the staff of instructors melted overnight. Every man rejoined his regiment up to the Inspector of Gymnasias, Colonel Walter Wright, who was, however, speedily recalled to his important post. This crisis he met by rapidly enlisting old graduates of the course who had left the service and taken positions in public and board schools, and private institutions. These formed the nucleus of the new staff with the half dozen he was able to retain in their positions. Soon he was to increase their numbers in another way. From the front, men kept coming back; one with a bullet through his shoulder blade; another with a piece of shrapnel in his face; and

*Royal Army Medical Corps.

a third with a ragged scar on his leg or a part of his foot gone—all wounds that made them useless in the fighting line, but did not prevent them from using their knowledge of teaching.

When we consider that the war started with the machinery for training 100,000 men and that the numbers to be attended to within a year mounted to nearly 3,000,000, the magnitude of the task will be evident. The number of instructors that could adequately manage the ordinary army of peace times scarcely touched the enormous masses of raw men in the training camps,—recruits who had to be turned into trained soldiers in months instead of years,—so he sent out a call to all commanding officers to select candidates, both officers and men, from their regiments. These men were to be sent to Aldershot for a special course to fit them as teachers in their own regiments. The selection was not always very well done, and some came whom no miracle of training could turn into good teachers; so a circular letter was sent out in which was stated, among other things, the qualifications required: (1) sufficient force of character to inspire respect; (2) intelligence and enough education to grasp the system of physical training; (3) sufficient activity to perform and illustrate the various exercises correctly; (4) age not under twenty or over thirty, as those under twenty have not as a rule developed the force of character necessary for discipline and those over thirty do not easily acquire certain positions which are important.

The response was such that even after quadrupling the numbers taken, there were always three or four waiting for every place vacant in the gymnasium course.

To make the course as simple as possible, the work that usually spread over four months was cut down to twenty-one working days, and the exercises were arranged into eight tables of movements, Swedish in character but arranged somewhat differently from the accepted Swedish day's order. Each table consists of two parts, the first part being subdivided into three, as follows:

Part I.

(a) Introductory exercises, five in number, for the leg, neck, arm, trunk and leg, in that order.

(b) General exercises consisting of span bending, balance, lateral, abdominal, dorsal; marching and jumping.

(c) Final exercises—leg and arm, to slow down the circulation, the arm exercise consisting of side upward raise and lower, with deep breathing, the rhythm being governed by the rate of respiration and not vice versa.

The progression is logical and carefully designed, the exercises becoming more difficult and complicated from table to table. Having mastered these, it is a simple matter to teach the special tables designed to give the trained soldier a stiff thirty minutes of work or the light morning table of five or ten minutes taken



Dr. R. Tait McKenzie, Major Royal Army Medical Corps

usually after a cup of cocoa or tea, or the remedial table with its emphasis on the abdominal muscles.

Part II consists of class formations, marching in quick, slow, and double time, jumping, hopping, the surmounting of obstacles, and gymnastic games like leapfrog and fox and geese. The object is to provide exercises for large numbers that can be taught by

comparatively untrained instructors and also to round out the day's work by these additions to the pure Swedish gymnastics.

The staff instructors lay stress on accuracy, alertness, speed, and discipline; most of the movements are in themselves far from violent, but the attention is kept at the highest pitch of intensity and any wandering of the mind receives a quick and efficient check.

The day's work begins at nine o'clock, when the table for the day is gone through again and again, with criticism and explanation, till 10.30. After a brief rest the class divides into couples, each putting the other through the table of exercises done the day before. The staff instructors criticise and instruct in the important art of teaching, the proper emphasis in the word of command, the adequate pause, the intonation, and the attitude of domination necessary for discipline. This part of the day justly receives quite as much attention as the actual performance of the movements, for each officer and man is being trained as a teacher rather than as a gymnast.

The colossal armies that have poured from the training camps into France, Egypt, Gallipoli, and Serbia, are composed of men from every walk of life,—lawyers, doctors, clerks, book-keepers, brokers, and students,—unaccustomed to the fatigues of marching and the heavy manual labor of digging. Miners, masons, bricklayers, carpenters, ploughmen, and iron workers, often bent and stiffened by long hours of hard slow labor, all must be strengthened, quickened and made supple and agile if they are to fill the rôle of the modern soldier.

This war is different from any other that has ever been. The marching is always forced. By day men must be ready to obliterate themselves from a hostile aeroplane, and march by night. The only protection from artillery fire is to dig oneself in. Usually after a hard day's march or fight he must dig for dear life in the dark, except when he throws himself flat as the enemy sends up its flames. The firing is feverish and the tension is continuous and extreme, requiring as never before the strong nerve and the steady hand. The continuous bursting of high explosives and hand bombs and mines will wreck any but the strongest nerves. Our hospitals are full of men whose only disability is a wrecked nervous system. The bayonet has come into its own again, just as the sword has disappeared. It needs a sound heart, good lungs, and a strong arm to make the sprint, and hard accurate thrust, of a bayonet charge. To go through all this the soldier must be mentally and physically fit as never before, and the weakling soon becomes a burden and a nuisance to his comrades.

The physical training and bayonet fighting as taught at Aldershot are designed to cultivate the qualities necessary for success in the field, and they do so admirably. The training is not so much physical, although that is what it is called, as mental. It is a brain-

quickening training; it enables men to assimilate instruction in their other work more rapidly than before. It hastens discipline and makes easier the work of the drill sergeant. If the object would be put in two words only, they would be "executive action," the training that would apply equally well in marching, digging, throwing bombs, jumping trenches, using the rifle and bayonet, or handling a gun. The very artificiality of most of the movements gives a special training to the will power and attention by isolating muscle groups against natural inclination.



Major R. B. Campbell of the Gordon Highlanders addressing the classes of officers and men in training at the Headquarters Gymnasium, Aldershot, on bayonet fighting

It is planned to give every soldier, after passing his recruit stage, one hour a day equally divided between physical training and bayonet fighting. This is not always possible, for the calls on his time are incessant. He has to learn such complicated movements as advancing in open order, use of sandbags, trench construction, signaling, rifle firing, bombing, company and battalion evolutions, route marching, and the hundred and one other things that go to make up his day, so that physical training is sometimes driven on to the early morning hour or forced out of the day. The program, however, is more generally carried out as its merits are permitted to show themselves, and always with results gratifying to the commanding officer.

The visit of men from the trenches has impressed more than ever the importance of the use of the bayonet, and the old and

picturesque bayonet exercise that was always an attractive display has been replaced by a less beautiful but much more practical method.

The drill movements and positions have been abolished except those of "on guard" and "point." The men are paired off and teach each other by signs rather than words. The application of this teaching is demonstrated on sacks hanging from gallows, set up on tripods, or set in trenches, and the bayonet course over which the recruit passes gives him experience in every combination of conditions with which he is likely to meet. He leaps



Dr. R. Tait McKenzie (Major R. A. M. C.) and Colonel Walter Wright (at the wheel), Inspector of Gymnasia, starting out from Headquarters Gymnasium, Aldershot, on a tour of inspection of the physical training of the new armies in camp scattered over England and Scotland

trenches, climbs parapets, thrusts down into trenches, or at hanging sacks, and the four simple parries he learns are considered not so much as a means of defense, as the clearing of an obstruction for his attack. There is no sparring for an opening. It is either a thrust, or a parry and thrust, and then on to the next.

The sense of control over his weapon, the actual experience of having driven his bayonet through solid objects, give a feeling of security and confidence that means much in the furious fighting that has been going on for this last year in Flanders and France, and there are increasing demands to have this work taught to the

men even when resting for the few days they are given behind the actual fighting line.

In the various inspection trips that I have made with the Inspector of Gymnasia over the great training camps in England and Scotland, there was never any difficulty in picking out the men and the battalions whose course had been well carried out under a good staff instructor, from those in whom the work had been badly done and neglected.

The commanding officers were unanimous in their appreciation of the rapid and unmistakable improvement in their command from the system. Most of the men in the new armies have been brought under discipline for the first time in their lives, and the training in speed, alertness, and agility, the stretching of joints stiffened by disease, and the strengthening of flabby and weak muscles, all combine to give them a feeling of well-being, confidence, and fitness, to which they have been a stranger throughout their whole civilian life.

OUTLINES OF WORK FOR GOOD POSTURE.

C. WARD CRAMPTON, M. D., NEW YORK CITY.

The following is an outline of the principles underlying the work for good posture in the New York City public schools indicated in "A New System of Physical Training," given before the Public School Physical Education Society (PHYSICAL EDUCATION REVIEW, Vol. — No. —). It is largely a summary of the material given to the high school teachers of physical training in the spring of 1912. Since then it has been adopted by the Board of Examiners and the Board of Superintendents and is now in operation in all New York City schools.

There are two classes of good posture. One has reference to the body alone, the other to the relations of the body to the environment.

DEFINITION. *Good posture is a good adjustment (1) of the various body parts to each other, (2) of the body as a whole to its environment, task or work.* The first primarily concerns ordinary physical training, the second, efficient vocational work both in school and in the shop, a field which physical trainers should develop forthwith. Only the first will be considered in this article.

What is commonly called bad posture is primarily a ptosis.

The erect position is biologically a recent one, hence the mechanism for the support of various parts in this comparatively new position is relatively weak and easily wearied. This causes three varieties of ptoses: (1) skeletal, (2) visceral, (3) blood.

Skeletal ptosis is shown in the dropping of the head, the increase of the normal curves of the spine, the lateral abnormal curves with rotation and the displacements resulting from bearing weight on one leg. All these cause a decrease in standing height as compared with horizontal length (a definite test of poor skeletal posture). Resulting from various ptoses are secondary antero-posterior displacements of head, shoulders, chest, abdomen, hips, and spinal rotation. Skeletal ptosis is caused by weak tone, relaxation, or chronic weariness of the muscles which hold the body erect; this in turn is the result of low vitality.

Visceral ptosis frequently accompanies skeletal ptosis. It may be *local*, i.e., one organ displaced downward, or *general*, in which the whole body content sags downward. In the latter, the chest is flattened, its capacity decreased, the abdomen protuberant and the lower ribs often bulging. It is the result of constitutional inferiority or of low vitality. While this usually begins after the tenth year, it occurs in infants weakened by disease, and the saucer-like depressions on the front and sides of the chest appear

and remain through life. It is tested by examination and percussion of the viscera.

Blood ptosis is a downward displacement of blood and its collection in the splanchnic veins of the abdomen. This is caused by an insufficiency in nervous vasomotor control of the splanchnic veins which continually work against the pressure of gravity and is increased by relaxation of a weak abdominal wall. This is again the result of low vitality. For the measurement of blood ptosis, I have proposed the test of comparison of the standing and lying blood pressures and heart rates. NOTE: Olympic Congress Lectures, Gold Medal Thesis, St. Louis Exposition, 1904. Blood Pressure in Its Relations to Physical Training Procedure. PHYSICAL EDUCATION REVIEW, 1905-1906; *Medical News*, September 16, 1905.

BLOOD PTOSIS.

These ptoses are more often found associated than singly, and form a symptom complex which is characteristic. Each symptom evidences a condition which is the result of low vitality and which in turn probably tends to cause low vitality, thereby establishing a vicious circle. Asthenia causes ptosis and ptosis asthenia.

Data on the correlation of body weakness and poor posture are conspicuously lacking. A series of statistical investigations on school children by students in my school hygiene course at the New York University indicates a correlation between good posture and good conduct and good school marks and indicates that children who have had good breakfasts have better average posture. The following interesting records are reported by Emanuel Haug of the DeWitt Clinton High School:

		Pull up	Average 110-yard run	Dipping on floor
Poor Posture	30 boys	5.5 times	16 3-5 sec.	10.3 times
Good Posture	27 boys	5.2 times	13 2-5 sec.	19.6 times

Though these figures are of greatest interest, we should have extensive and conclusive data on the correlation of poor posture with various kinds of inefficiencies.

Methods of getting good posture.

1. Good hygiene.
2. General hygienic exercises.
3. Corrective exercises.
4. Devices.

1. *Good hygiene*, the careful regulation of the daily routine with attention to all details: washing, tooth brushing, mastication, exercise, recreation, rest, etc., is of paramount importance and

no mere system of corrective exercise will ever avail without it. Medication and operative correction are sometimes indicated.

2. *General hygienic exercises.* These should provide ample, regular and vigorous vaso-pulmonary stimulation and strengthen the abdominal walls.

Vaso-pulmonary exercises should have the following characteristics:

1. Large movements of large muscles.
2. Simple movements easily learned and often repeated, natural and mimetic exercises are the best. Running is the type.
3. Movement, not position, should be emphasized; hence response commands are inappropriate and rhythmic serial commands should be used. They may be done to music which the phonograph is especially useful in supplying.
4. Amplitude of movement rather than accuracy should be emphasized.

For *strengthening the abdominal walls*, familiar forms of trunk bending and twisting should be used serially with many repetitions. Exercises lying on the back are particularly useful. Standing hygienic exercises should, whenever possible, provide strong contraction of the dorsal extensor mass of muscles on every other count.

Corrective Exercises:

These are exercises which are designed to correct the deformity by (1) putting the displaced parts in proper position, (2) giving a consciousness of correct posture, (3) strengthening and shortening the weakened and stretched sustentacular structures.

For this purpose, exercises which operate directly against the ptosis should be chosen, since ptosis is the primary deformity. The most important are therefore "elevation exercises" which are of two kinds, (a) static and (b) slow movements, with association value.

Static exercises consist of one elevated position which is held while "elevation cues" are used. The latter are essential and must be carefully selected. After a long study of the subject, four exercises were devised and all others discarded. These are the only ones which will be used for elevation purposes in the elementary schools of New York City. This arbitrary procedure is warranted by the fact that they are the simplest and most effective known to me, any progression or variation would make them less effective and would require teachers and pupils to learn something new. Efficiency, not variety, should determine gymnastic selection. For this reason, the fewer exercises the better, for the attention and interest of teacher and class should

be centered upon the *result* to be obtained, not upon new exercises. This permits them to understand, to become interested, and to coöperate. In addition simple breathing with chest lifting is an important and simple adjuvant.

The following static exercises are used in the elementary and high schools of New York City:

Elevation Cues are always used while the static contraction is held for the purpose of lifting and straightening the body. They should be used with *meaning, vigor, and discrimination*. The following are the best:

- Lift the chest (head, weight).
- Push the chest (head) upward.
- Press the chest (head) upward.
- Raise the chest (head, weight).
- Stretch the body upward. Stretch the knees.
- Stretch forward from the ankles.
- Stand tall. Hold the head (chest) up.

1. "*Touching hands at side of shoulders, elbows down—Touch! Lift!*"

The elbows should be pressed down close to the body. Chest and head lifted; body straightened upward. In this position pupils should be given "elevation cues" for the head, chest, weight.

Correct such faulty positions as "elbows back" or "wrists forward."

2. "*Hands over shoulders—Place! Lift!*" etc.

In this position the elbows are raised high; the hands are above the shoulders; the chest and head are raised; body straightened upward. The teacher should use "elevation cues" given above, and call for raising elbows and wrists. Variations—Finger tips touching shoulders, fist tight, palms turned forward or upward.

3. "*Bending arms at shoulder level—Bend! Lift!*" etc.

Hands in front of shoulders, palms down, elbows and shoulders lifted high (*not back*) carrying chest up and straightening spine. Use "elevation cues."

4. "*Stretching arms sideways with palms up—Stretch! Lift!*" etc.

Hands level of eyes or above, palms flattened upward and hands pressing upward (*not back*). Use "elevation cues."

All of these exercises have one elevated position, which is held from three to seven seconds and pressed hard. During this time the teacher must urge, and the pupils must work for, elevation.

"Lift the head" and "hold the head up" are used, and "chin in," "neck back against the collar," are discarded. No definite statement can be made as to how far the chin shall be in, the head back or how hard the neck shall be pressed against the collar. Too far, results in bad posture, worse than before, and the accompanying discomfort discredits the teacher and discourages effort.

The elevation commands give just exactly the proper position of the head.

No mention is made of the shoulders for their position is dependent upon the chest and dorsal spine, and the relative tonicity of the anterior and posterior muscular masses. "Shoulders back" is the worst and commonest error of the laity. "Flatten the shoulder blades" cannot be done, for they are bones, and an endeavor to do so pulls back the shoulders, and often the chest and is likely to push the abdomen forward. "Chest forward" is indefinite. "Chest high" is definite, direct, and efficient. "Hips back" often increases the lumbar curve. "Weight forward" is a common and often useful command, but has the disadvantage of indefiniteness. Physical training teachers do not agree as to how far forward the weight should go. "Over the toes"; "over the instep," "ear, shoulder and ankle in line," "chest over toes," etc., illustrate the discrepancies of practice and faith. The stretching upward commands will give the correct result without danger of exaggeration of the necessity of correcting anew the strained leaning forward too far. In five classes that had been trained by a careful and efficient teacher, the only bad posture I observed was the result of the use of the command "weight forward."

The elevation cues should be used as indicated with these exercises and also throughout all gymnastics.

Slow movements of the elevation type may be used with effect by the trained teacher of gymnastics. They consist of upward movement of the arms from a low to a high position with a corresponding feeling of elevation induced by a mental picture which the teacher provides. The elevated position is often held. A development of this method may make dance movements of greatest value for corrective purposes.

Other exercises strengthening the neck and shoulder muscles may be introduced, although educational and hygienic exercises may easily contain these elements in sufficient prominence.

Devices. Good posture is largely a matter of habit dependent upon the interest and will of the pupils. These may be aroused and maintained by various devices.

1. The physical, mental, social, and commercial value of good posture should be fully explained and constantly used as motives.

2. School children should be marked on posture. This will call attention to personal defects and will give definite evidence to the child that good posture is one of the things valued by the school and given credit by school authorities. Record should be kept of the marks which should be reported to the home with the grades given in arithmetic, etc.

3. Marks should be given at periodical examinations rapidly executed. The class may be called upon to give ratings to each pupil in turn.

4. Classes may be divided into groups according to good, fair, and poor posture, and may fall into appropriate sections for each gymnastic lesson. A "slouch class" may be formed and given special exercises while the other pupils are engaging in some more free and pleasant recreation.

5. Class records may be kept and made the basis for self-improvement and interclass competition. Upon stated occasions the school may be reviewed in assembly and classes graded by the principal or supervisor, receiving due honor.

6. Posture monitors may be appointed. These may report upon habitual posture outside the classroom.

7. Special home work should be assigned. Bad posture should be considered a physical defect and the coöperation of parents enlisted.

Good posture is one of the important aims of physical training and when obtained it is often an evidence that we have been successful in making the pupil strong and vigorous. It is to be obtained only as a result of consistent training in which elevation exercises, good hygiene and hygienic exercises of the formal and recreative types, all have important functions.

SOME CURRENT FALLACIES ABOUT COLLEGE ATHLETICS.

GEO. W. EHILER, PROFESSOR AND DIRECTOR OF PHYSICAL EDUCATION,
UNIVERSITY OF WISCONSIN.

"The football man as a rule is a joke as a student." This statement is a fair sample of the kind of "stuff" that certain promoters and defenders of professional athletics are peddling to newspapers and magazines. The apparent motive is to bring the amateur athlete into contempt and disrepute and so to "boost" the interests of commercialized sport that greed and cupidity and dishonesty have made so notorious.

To those who are acquainted with the facts, the statement quoted above is known to be entirely incorrect and an insult to thousands of America's finest young manhood. Yet it is given currency over the signature of a writer of national repute and prominence and one supposed to know the facts about which he writes. Were it not for the standing of the author of this and other similar "facts," such statements could be safely ignored, but their repetition and widespread publicity in reputable organs make it important that they be vigorously denied and disproved, otherwise amateur athletics, the only means for developing and maintaining vigor and virility and virtue that American boys and young men have any interest in, will fail of its rightful place and function in the educational systems of the state and nation.

In connection with the quoted remark the gifted writer adds: "Fully 50 per cent of the men who played football on our larger college teams last fall were not in college to gain educations but to play football." "Every undergraduate knows it, and in every college it is common talk." This is not merely vapid hyperbole. It is plain misrepresentation with a bad motive.

The conditions at the University of Wisconsin are no different from Chicago, or Illinois or Minnesota or any of the other institutions of similar grade. What are the facts?

The 'varsity football squad at Wisconsin in 1914 consisted of forty eligible students. Each of these men (1) had to be a bona fide student (registered and all fees paid), (2) have fulfilled all entrance requirements (be a graduate of an accredited four-year high school with fourteen or more units or courses, each carried successfully for one year and requiring recitations five times a week), (3) have been in residence in the University for one full college year (forty weeks), (4) have satisfactorily completed all courses taken since he entered the University (i.e., have no grade less than 70 per cent), (5) have a "weighted average" of not less than 77 per cent for the preceding semester (a five-hour subject counts five times as much as a one-hour course),

(6) be carrying full work in courses leading to a degree (fifteen or more credit hours per week requiring twenty hours or more actual time in recitation, lecture, quiz or laboratory, besides the time needed for reading, studying and writing), and (7) not have played more than two previous seasons.

Of the forty students:

12 were Sophomores, second year in the University.

18 were Juniors, third year in the University.

10 were Seniors, fourth year in the University.

In other words the students who were successful in making the squad were all men who had satisfied every scholastic requirement and were carrying grades that would earn them their academic degrees. Whether "they were in college only to play football" or not, they were certainly gaining educations or very wondrously fooling an astute body of men who are experts at weeding out the unfit and lazy and insincere and dishonest.

Of equal dignity and truth with this "joke as a student" canard is the statement by the same author that students go to college to play on the various teams as a money-making plan. Inasmuch as "our larger college teams" in the Middle West are in the Intercollegiate Conference, which requires that all athletic funds be received and disbursed by faculty officers, it is apparent that no student can receive money from the athletic treasury without the connivance of such officers. Such wholesale indictment of these men as is made in the statement quoted at the beginning of this paragraph is palpably untrue and ridiculous.

"Competition between colleges (is) chiefly for the gate receipts." With the exception of football nearly every other intercollegiate sport is conducted at a loss. It is the surplus of receipts over the expenses of the football squad that makes possible three-fourths of the intercollegiate games. If the quoted statement were a fact, only the paying sports would be conducted. As a matter of fact, intercollegiate contests are but the natural expression of certain innate tendencies, characteristic of English and American youth and those of other nationalities who have come under their influence. It is the tendency to match one's strength and skill against that of another. It is the same fundamental factor that accounts for all English and American sport, both amateur and professional, and is the cause of the Athletic Union, the Amateur Athletic Federation, The National Golf Association, The National Amateur Baseball Association, The Public Schools Athletic Leagues, Y. M. C. A. League, Young Men's Catholic Athletic Association, The American, National and Federal Baseball Leagues and the innumerable sectional, state and city leagues and associations of every sort—tennis, swimming, rowing, skating, bicycling, horse-racing, yachting, canoeing, etc., etc., and greatest of all, the World's Olympic Games.

Whenever a group of boys or young men associate together long enough to discover that certain of them combined in a team are better than any other combination in the group, they become eager to try out their team against the team of some other group and thus, vicariously, the whole group pits itself against its neighbors, and the circle once started continues in ever widening arcs, reaching from the match between the teams of two neighboring street gangs to the great international contests between teams representing the nations of the whole world as at Athens, Paris, St. Louis, London and Stockholm. Intercollegiate athletics is but one great phase of this universal instinct and tradition which is seen in its worst phase in the great European war. Organized and directed with educational, social and moral ends in view, athletics, interclub, interschool, intercollegiate, intercity, interstate, intersectional, international—constitute the moral equivalent of war on its constructive side and make for the development of loyalty and patriotism and altruism.

"Gate receipts" are not *the* object of intercollegiate athletics. They are essential, for without them there would be no intercollegiate athletics. In this they do not differ from any other type of organized interinstitutional sports.

Another fallacy is that "intramural" sports (sports for all students) will flourish only if intercollegiate sports are cut out. This is founded on two ideas, both of which are fallacious; the first that the money saved by the elimination of the intercollegiate expense could then be devoted to "sports for all the students"; the other that intramural and intercollegiate activities are antagonistic and cannot both be successfully conducted in the same institution.

The elimination of intercollegiate sports will automatically cut off the income from those sports and there will be no funds therefore to devote to intramural sports except as students are taxed, or the college appropriates cash from its regular funds, or endowment is provided by generous alumni or others.

That intercollegiate and intramural athletics are not mutually exclusive of each other is shown by the fact that sports for all students are most highly developed in those colleges and universities where there is the broadest development of intercollegiate sport—notably Harvard, Yale, Princeton, Michigan, Wisconsin and others.

At Wisconsin two-thirds of all undergraduate students, both men and women in equal proportions, are engaged in some form of physical exercise adapted to their needs or desires. Moreover the intramural activities are under the coaching and direction of the same coaches and instructors as handle the intercollegiate teams. Further development of outdoor sport waits on increased facilities. The surplus from intercollegiate receipts will eventually repay every cent the state may advance for this purpose.

CALISTHENIC NOMENCLATURE.

J. H. MCCURDY, M. D.

INTRODUCTION.

This nomenclature furnishes a terminology for free exercises, dumb-bells and wands. The aim has been to include terminology for all of the common movements. The author would appreciate suggestions regarding additions or changes in the nomenclature which would make it more useful. This nomenclature is now used by the International Y. M. C. A. College in its normal course of physical education, and in the practice courses given by the students. It is also in practical use by many of the 300 alumni of the college at Springfield who have been taught to select many of these terms during their senior year practice teaching from the calisthenic dictionary by Fish. During the years 1899-1901, A. L. Fish, a graduate student, under my direction compiled a dictionary of all the common calisthenic terms. Since 1901 this duplicate terminology has been studied with a view of eliminating the terms which (a) lacked clearness of description, (b) were difficult to speak clearly because of lack of vowels, (c) were long and cumbersome. The attempt has been made to use concise, clear language which could be readily understood by either children or adults. Credit should be given A. L. Fish for his careful work in compiling the dictionary of calisthenic terminology which has made possible this selection of terminology. I wish to acknowledge the helpful suggestions of Dr. William Skarstrom, G. B. Affleck, Elmer Berry and Louis C. Schroeder. The bibliography at the end gives the chief sources.

GENERAL DEFINITIONS.

1. POSITION OF ATTENTION. (Description with quotation marks are from infantry drill regulations of the United States Army for 1911.)

"Heels on the same line and as near each other as the conformation of the man permits.

"Feet turned out equally and forming an angle of about 45 degrees.

"Knees straight without stiffness.

"Hips level and drawn back slightly; body erect and resting equally on hips; chest lifted and arched; shoulders square and falling equally.

"Arms and hands hanging naturally, thumb along the seam of the trousers.

"Head erect and squarely to the front, chin drawn in so that the axis of the head and neck is vertical; eyes straight to the front.

"Weight of the body resting equally upon the heels and balls of the feet."

2. THE RESTS.

"Being at a halt, the commands are: Fall Out; Rest; At Ease; and, 1. Parade, 2. Rest.

"At the command *fall out*, the men may leave the ranks, but are required to remain in the immediate vicinity. They resume their former places, at attention, at the command *fall in*.

"At the command *rest* each man keeps one foot in place, but is not required to preserve silence or immobility.

"At the command *at ease* each man keeps one foot in place and is required to preserve silence but not immobility."

1. *Parade*, 2. *Rest*. "Carry the right foot 6 inches straight to the rear, left knee slightly bent; clasp the hands, without constraint, in front of the center of the body, fingers joined, left hand uppermost, left thumb clasped by the thumb and forefinger of the right hand; preserve silence and steadiness of position."

To resume the attention: 1. *Class*, 2. *Attention*.

3. CLASS SALUTE.

1. *Right (left) hand*, 2. *Salute*.

"Raise the right hand smartly till the tip of forefinger touches the lower part of the headdress (if uncovered, the forehead) above the right eye, thumb and fingers extended and joined, palm to the left, forearm inclined at about 45 degrees, hand and wrist straight. (*TWO*) Drop the arm smartly by the side."

4. COMMANDS.

Commands are of two kinds: 1. descriptive and preparatory; 2. executive. The preparatory command describes concisely and clearly the movement. The executive command gives the exact time of beginning the movement in formal gymnastics and the rhythm of the movement in serial or continuous movements. In formal gymnastics the executive command indicates that the movement is made immediately and the position held until a new command is given, e.g., in the command *trunk forward bend*, the position is held until the command *upward raise* is given.

In rhythmic exercises the executive command starts a movement which is continued for a definite number of counts; e.g., *trunk forward bending, START*. At the command *start*, the movement is begun and continued for a definite number of counts, usually

16 to 24, or until the command *stop* is given. The command may be given as follows: *Trunk forward bend! Upward raise in series! Start! Stop!* or *Trunk forward bending—start—stop*. In the last command the participle indicates that the movement is serial in character. A good plan in serial work is to give the exercise through formal command once or twice until the pupil has a clear idea of correct form in the exercise, then repeat it in series.

The command *hold* indicates that the serial exercise is held in the position the pupil is just assuming, until a new command is given.

COUNTING AS COMMANDS.

Counting is used in two ways: 1. Rhythmic counting, where the count gives the general rhythm of the movement, the count coming generally at the end of the movement; if the count comes earlier it indicates the desire of the instructor for a more rapid rhythm. The instructor or the class may count silently, the instructor simply interjecting audible counts from time to time to regulate the rhythm of the exercise. 2. Command counting is where the count is used in place of the full command. Each count is used as a *starting* command for a section of the movement, e.g., *Trunk forward bend! upward raise to count 1-2-3-4* or *1-2, 1-2*.

ADDITIONAL TIME MARKERS.

Clapping the hands, the raising and lowering of the arms, the striking of the heel sharply on the floor, the striking of a wand or stick on the floor and the use of a metronome are all used to regulate the rhythm of movement in rhythmic exercise.

POSITION.

The command *position* brings the pupil back to the fundamental starting position of the exercise. In free exercises the position is identical with the position of attention in dumb-bell and club exercises, the position is one of attention with the bells or clubs grasped in the hands, in wand and bar bell exercises the apparatus is held in the thigh horizontal position. Other "key" positions may be given when desired.

TRUNK.

1.

1. POSITION. Trunk forw. bending position. (Stoop st. pos.) (Prone st. pos.)
2. MOVEMENT. Forw. bending of trunk.
3. COMMAND. Trunk forw. bend! Upward raise!

4. DESCRIPTION OF EXERCISE. From fundamental position the trunk is bent forward as far as possible, bending only at hip-joints; relative position of head and shoulders unchanged; knees straight.

2.

1. POSITION. Trunk forward downward bending pos. (Prone pos.)

2. MOVEMENT. Trunk forw. downward bend!

3. COMMAND. Trunk forw. downward bend! Upward raise!

4. DESCRIPTION OF EXERCISE. From fundamental position the trunk is inclined forward as far as possible, bending at hip-joints forward as far as possible, the relative position of head and shoulders unchanged; knees straight.

3.

1. POSITION. Trunk downward bending pos. (Slack stoop st. pos.)

2. MOVEMENT. Trunk downward bending.

3. COMMAND. Trunk downward bend! Upward raise!

4. DESCRIPTION OF EXERCISE. From fundamental position the trunk is bent forward and downward as far as possible, flexing at hip-joints and entire spine; knees may be slightly bent if desired.

4.

1. POSITION. Neck backw. bending pos. (Arch pos.)

2. MOVEMENT. Neck backw. bending.

3. COMMAND. Neck backw. bend! Upward raise!

4. DESCRIPTION OF EXERCISE. The trunk is bent backwards as far as possible, extending the cervical and upper-dorsal spine only. Avoid extension of the head on the atlas.

5.

1. POSITION. Trunk backw. bending pos. (Arch st. pos.)

2. MOVEMENT. Trunk backw. bending.

3. COMMAND. Trunk backw. bend! Upward raise! or upward stretch!*

4. DESCRIPTION OF EXERCISE. The trunk is inclined backwards as far as possible. Extension should commence in the cervical spine and continue throughout the entire spine and hip-joint. Avoid extension of the head on the atlas, and flexion at the knees.

*Stretching indicates a slower movement with subject standing as tall as possible.

6.

1. POSITION. Trunk sidew. bending pos.
2. MOVEMENT. Trunk sidew. bending.
3. COMMAND. Trunk to l. (r.) bend! Upward raise!
4. DESCRIPTION OF EXERCISE. The trunk is bent to the side as far as possible; the head and shoulders retain the same relative position and the same plane as in the fundamental position; avoid raising the heels from the floor, and rotation and movement of the hips.

7.

1. POSITION. Trunk twisting pos. (Twist st. pos.)
2. MOVEMENT. Trunk rotating or twisting.
3. COMMAND. Trunk to l. (r.) twist! Forward twist!
4. DESCRIPTION OF EXERCISE. The body is twisted or turned to the side as far as possible; rotation should occur only on the dorsal spine.

8.

1. POSITION.
2. MOVEMENT. Trunk circumducting.
3. COMMAND. Trunk to l. (r.) circle! Position!
4. DESCRIPTION OF EXERCISE. With the hips as the center, the head describes a circle with as large a circumference as possible; rotation should be eliminated as far as possible. Circumduction may be started by forward, sideward or backward bending of trunk.

HEAD.

1.

1. POSITION. Head forw. bending pos.
2. MOVEMENT. Head forw. bending.
3. COMMAND. Head forw. bend! Upward raise or upward stretch!
4. DESCRIPTION OF EXERCISE. The head is bent forward as far as possible; flexion beginning at the atlas and continuing throughout the cervical spine.

2.

1. POSITION. Head backw. bending pos.
2. MOVEMENT. Head backw. bending.
3. COMMAND. Head backw. bend! Upward raise or upward stretch.
4. DESCRIPTION OF EXERCISE. In the backward bending of the head the movement begins in the cervical spine and is continued by extension of the head on the atlas. Avoid lumbar extension.

3.

1. POSITION. Head sidew. bending pos.
2. MOVEMENT. Head sidew. bending.
3. COMMAND. Head to the l. (r.) bend! Upward raise!
4. DESCRIPTION OF EXERCISE. The head is bent or flexed to the side without change in the position of the rest of the body. Avoid rotation of the head.

4.

1. POSITION. Head twisting pos. (Head twist st. pos.)
2. MOVEMENT. Head twisting.
3. COMMAND. Head to the l. (r.) twist! Forward twist!
4. DESCRIPTION OF EXERCISE. Without bending the head or changing the position of the body, the head and cervical spine are turned to the left or right as far as possible.

5.

1. POSITION.
2. MOVEMENT. Head circling.
3. COMMAND. Head to the l. (r.) circle! Position!
4. DESCRIPTION OF EXERCISE. With the base of the neck as the center, the top of the head describes a circle with as large a circumference as possible; the tendency to twist the head during the exercise should be overcome; the circumduction may start with a forward, sideward, or backward bending of the head.

ARMS.

NOTE: Arm flinging indicates rapid movement; arm raising indicates slower movement; arm *stretching* indicates that the arms reach the new position through the bend stand; arms *replace* may be used for rapid returns from any position.

1.

1. POSITION. (Arm front horizontal pos.) (Reach st. pos.)
2. MOVEMENT. Arm raising forw.
3. COMMAND. Arms forw. raise! Downward sink!
4. DESCRIPTION OF EXERCISE. Both arms are quickly raised forw. ninety degrees to the front horizontal; palms in and width of the shoulders apart; the rest of the body remains as in fundamental pos. If the position is taken from the "bend st. pos." the command is, "Arms forw. thrust!"

2.

1. POSITION. (Arm vertical pos.) (Stretch st. pos.)
2. MOVEMENT. Arms raising forw. upward.
3. COMMAND. Arms forw. upward raise or stretch! Downward sink or stretch!

4. DESCRIPTION OF EXERCISE. Without change in the position of the body the arms are quickly raised forward and upward to the vertical pos.; palms in; hands width of the shoulders apart.

3.

1. POSITION. Arm backw. ext. pos. (Backw. reach st. pos.)

2. MOVEMENT. Arm stretching (extension) backw.

3. COMMAND. Arms backw. extend! Arms sink!

4. DESCRIPTION OF EXERCISE. From fundamental pos. the arms are extended directly backw. and downward, at the same time the shoulders are carried well back without raising them; palms in.

4.

1. POSITION. Arm side horizontal pos.

2. MOVEMENT. Arm raising (flinging or stretching sideways).

3. COMMAND. Arms sideways raise!

4. DESCRIPTION OF EXERCISE. Without change in position of the rest of the body the arms are quickly raised sideward and upward ninety degrees to the side horizontal position; arms fully extended and carried well back; palms down.

5.

1. POSITION. Arm vertical pos. Stretch st. pos.

2. MOVEMENT. Arm raising sideways upward or stretching upward.

3. COMMAND. Arms side upward raise or stretch!

4. DESCRIPTION OF EXERCISE. The arms are quickly raised through the side one hundred and eighty degrees to the vertical; arms perfectly straight and carried back as far as possible without changing the position of the body; avoid lumbar extension; palms in.

6.

1. POSITION.

2. MOVEMENT. Arms circling left.

3. COMMAND. Arms to left circle—Start or swing.

4. DESCRIPTION OF EXERCISE. From the fundamental position the arms describe l. circle in the lateral plane; the tips of the fingers making as large a circle as possible; the body kept motionless without appearing stiff.

7.

1. POSITION.

2. MOVEMENT. Arms circling right.

3. COMMAND. Arms to right circle. Arms large circles (r.)—Start or swing.

4. DESCRIPTION OF EXERCISE. The exercise is executed the same as No. 6, except that the arms describe a right circle.

(TO BE CONTINUED.)

NEWS NOTES.

Dear Dr. McCurdy:

I send herewith extracts from a letter received from Baron de Coubertin which, as it gives directly his opinion on the relation of athletics to war, is to my mind appropriate to print in the REVIEW.

Yours sincerely,

PAUL C. PHILLIPS.

**EXTRACTS FROM A LETTER RECEIVED FROM BARON
PIERRE DE COUBERTIN.**

The following extracts from a letter recently received from Baron Pierre de Coubertin relative to the relation of athletic sports to war deserve printing in the REVIEW, as they were raised by the reading of the writer's article on "The Relation of Athletic Sports to International Peace," printed in the March REVIEW. In this letter Baron de Coubertin says: "It has very frequently happened that my views and work have been misunderstood in America, and I feel very sorry for it. . . . I think the speech at the Sorbonne last June (I mean June, 1914) when President Poincaré and the delegates of some twenty-two nations of the world were present on the occasion of the celebration of the Revival of the Olympic Games, sums up my views on this question. It was published in the well-known French weekly, *La Revue Hebdomadaire*, of June 20, 1914. You will find it there. Then there is the August, 1913, number of the *Revue Olympique*. In case it does not prove easy for you to get it and while I regret not to have a copy to send you, I enclose the necessary quotation from it."

Translation from the article of the Baron de Coubertin in the *Revue Olympique*, of August, 1913.

"**Olympicism* has not reappeared in the midst of modern civilization to play a local or a passing rôle. The mission confided to it is universal and venerable by age. . . . Such being the case, a war could only interfere with and not stop its course. As the preamble of our constitution (or by-laws) indicates: 'It

*For the above translation I am indebted to Prof. William A. Stowell, of Amherst College, to whom the passage was referred in order that the English might convey the precise shade of Baron Coubertin's meaning.

is possible *not* to hold the Olympiad, but neither its order nor its intervals can be changed. If, as God forbid, the seventh or the eighth Olympiads were not held, the ninth would be. If memories bloody and still too recent should prevent the necessary festivities being organized in a certain part of the world, there would be on the other side of the earth peoples ready to honor eternal human youth.

"Also, a more sportsmanlike conception of war is tending to predominate (the word sportsmanlike is not out of place), which sportsmanlike conception, while it will not make the passage at arms less severe, will make its aftermath more bearable. Nations will learn the great lesson of sportsmanship; namely, that hate without fighting is little worthy of man and that insult without blows is quite unworthy of him."

It is interesting to note that the writer used the expression "international sportsmanship" in his article written in December, 1914, without knowledge of its previous use in a like connection by Baron Coubertin. In the former case, however, it was used regarding the prevention of war but by Coubertin regarding its conduct.

NOTES ABOUT NEWARK.

The newest feature to be inaugurated by Mr. Randall D. Warden, director of physical education in Newark, is the establishment of a "Social Center" in the Hamburg Place School. The aim of this project is the formation of clubs of various kinds, namely: dramatic, musical, instrumental and choral, debating, dancing and any other for which a sufficient number may apply, under suitable conditions and with trained leaders in charge of each branch.

Already rapid strides have been made and the popularity of the "Social Center" may be attested to by the fact that over four hundred (400) are already enrolled in the numerous clubs or societies.

The new gymnasias that have been equipped and opened with the new term, and the teachers appointed to them are Robert Treat School with Mr. George Young, Lafayette School with Mr. August R. Goeltz, McKinley School with Mr. Robert L. Latimer. Mr. Carl Baumann, who formerly had two schools, Warren and Boys' Industrial, has been assigned to the Abington Avenue School where the alternating plan similar to the Gary System has been applied. Mr. Richard M. Hall will temporarily take charge of Warren and Boys' Industrial Schools. Mr. John Skillman has been appointed to the Ridge School. Mr. Abraham Jacobson, formerly of Ridge School, was transferred to Morton Street. Mr. James A. Molloy, who was at the Morton Street

School, was promoted to the East Side High School. Miss Edna P. Brown was appointed to the Barringer High, Miss Winifred Pierce to the South Side, and Miss Katharine Quinn appointed to the Central High School to take Miss Dolan's place. Miss Dolan resigned to become the bride of Mr. Homer D. Rich.

Mr. Lewis H. Field has been promoted to the assistantship at Barringer High School, and Mr. Robert L. Criswell takes his place at Hawthorne Avenue. Mr. Joseph A. D'Angola was promoted from assistant at Barringer to the position of Special Teacher of Athletics, assisting the supervisory department of physical education. Several new gymnasias are being planned. Newark's physical education force now numbers forty-three (43) members. The field in Newark is continually growing and opportunity is always open to the physical director with the right qualities.

While Orange is not in Newark, still it is very close by and the appointment to the schools there as physical director, of Mr. Carl F. Seibert, is announced.

**BUSINESS MEETING OF NATIONAL COUNCIL OF AMERICAN PHYSICAL EDUCATION ASSOCIATION, JULY 23,
HELD AT FACULTY CLUB, UNIVERSITY
OF CALIFORNIA.**

Members present: Dr. Everett C. Beach, Member-at-large, Los Angeles, Cal.; Dr. Herman Groth, Western Pennsylvania Society; J. H. McCurdy, Secretary; Lory Prentiss, Secondary School Society, Lawrenceville, N. J.; Baroness Rose Posse, Therapeutic Section, Boston.

The Pacific Coast Society officers were invited. The members present were Mr. E. B. DeGroot, Miss Maude Cleveland, Mrs. May L. Cheney, Miss Signe E. Hagelthorne. As there was not a quorum present an informal discussion of the problems of the Association was conducted with Mr. DeGroot as leader.

The following business was done subject to the ratification of the Council: The persons in the list in the November REVIEW were elected to membership. The chairman of the luncheon asked Dr. McCurdy to give a brief historical statement of the development of the Association. He spoke of the growth of the Association and of the problems which must be solved by the Association, particularly the problem of conventions in widely different sections of the country.

The secretary-treasurer's report was read and accepted, as follows:

FINANCIAL REPORT.

RECEIPTS.		
	1914	JUNE 23, 1915
Dues	\$1785 95	\$1901 94
Subscriptions	358 16	334 96
Advertisements	346 01	402 46
Miscellaneous	942 14	1029 82
	<hr/>	<hr/>
	3432 26	3669 18
Balance	451 10	213 18
	<hr/>	<hr/>
	\$3883 36	\$3882 36

EXPENDITURES.		
	1914	1915
Publishing	\$1429 12	\$1240 45
Salary	650 00	700 00
Rebates	418 00	421 00
Office supplies	231 15	247 04
Miscellaneous	1088 45	1165 71
	<hr/>	<hr/>
	\$3816 72	\$3774 20

MEMBERSHIP REPORT.

	JUNE 23, 1915	CONVENTION APRIL, 1914	ANNUAL MEETING DEC. 31, 1914
Total members	1473	1393	1488
Paid-up members	935	893	1123
Paid-up subscribers	304	248	288

BUSINESS MEETING OF THE ASSOCIATION, JULY 24.

The members-at-large elected to membership on the National Council are E. B. DeGroot, San Francisco; Miss Signe E. Hagelthorne, Oakland, Cal., and Miss Ethel Perrin, of Detroit.

The motion made by Mr. Prentiss of the Lawrenceville School, Lawrenceville, N. J., was unanimously endorsed by the members in attendance at the last meeting of the Convention. Be it resolved that the cordial thanks and deep appreciation of this Convention be expressed to the mayor and city council of Berkeley, the University authorities, to the local committee and especially to its chairman, Dean Rieber. The generous conception of the plan as a whole, the completeness with which every detail has been provided for, the many courtesies which have been extended, have set a high standard for future conventions.

Mr. DeGroot was asked to send a cablegram of greeting to Dr. McKenzie, president of the Association, who is at present serving as a medical officer in the English army, in charge of certain branches of physical education.

On Mr. Prentiss' motion a telegram of congratulation to Dr. Sargent on his long service in physical education was sent by the chairman, Mr. DeGroot.

Mr. DeGroot expressed publicly his thanks to the National Association for their acceptance of the Pacific Coast Society's invitation to meet on the coast.

Miss Cleveland presented Mr. Dudley's report on the women's organization. The report was accepted with the understanding that the material be turned over to the REVIEW by Miss Cleveland.

The Association voted thanks to the Pacific Coast Society and Mr. DeGroot for the reception and entertainment of the members.

CHRISTMAS MEETINGS IN NEW YORK.

Athletic Research Society, Hotel Astor, December 27, 10.30.

Preliminary program:

(1) How institutions should secure and select the members of their representative teams. Discussion led by W. P. Bowen.

(2) How the various bodies governing athletic sports in the United States promote and control these sports. Discussion led by Dr. George J. Fisher.

(3) How athletes can best be grouped and their performances scored, looking toward a possible standardization of scoring methods. Discussion led by Dr. John Brown, Jr.

(4) How present agencies can best coöperate for the promotion of mass athletics for everybody in all schools and colleges, and what other agencies should be put in operation for the same purpose. Discussion led by Dr. H. F. Kallenberg.

National Federation Committee meeting, Hotel Astor, Monday, December 27, 6 p.m.

National Collegiate Athletic Association, Hotel Astor, Executive Committee meeting, December 27 (evening). Regular session, December 28.

College Directors' Society, Faculty Club, Columbia University, December 29, 10 a.m.

National Council American Physical Education Association, Hotel Astor, Thursday, December 30, 10.30 a.m.

BOOK REVIEWS.

GYMNASTIC TACTICS. PART II. TACTICS OF THE RANK. *E. H. Arnold*. Published privately, 1915. 68 pp. 50 cents.

The preface of this manual, which is quoted, gives the author's idea and plan. "Tactics of the Rank may be used for the same purpose as the Tactics of the Individual, namely, to shorten reaction time and to cultivate the power of discrimination. For the former purpose, they are not as efficient, generally speaking, as the Tactics of the Individual; but since their variety is rather greater than that of Tactics of the Individual, their usefulness for the latter object is thereby enhanced.

"The method of arriving at the two objects is essentially the same as that used in the Tactics of the Individual. The Tactics of the Rank are applied arithmetic, geometry and physics. They teach these disciplines in an objective manner and may readily supplement the teaching of those branches. On another occasion I have enlarged upon what one may teach by the simple movement of quarter wheeling. If a quarter wheel may teach such a great variety of things, what will not the many other forms of Tactics of the Rank teach? Choice of action, judgment, is not exercised in any form of tactics, and therefore not in Tactics of the Rank. Other forms of gymnastic activity must step in for this purpose. Concentrated action, team work, leadership and loyal fellowship, however, find an efficient exponent in Tactics of the Rank. The idea that these desirable qualities can only be gotten through plays and games is certainly erroneous.

"I shall take occasion at some future time and in another place to dilate upon this particular point. As this booklet is intended as a systematic arrangement of Tactics of the Rank, no hints on the method of their use in a system of gymnastics are here given. It is the function of normal school training to furnish these."

Under the Varieties of Ranks, front rank, flank rank, left oblique rank, and right oblique rank, are given definitions of these varieties. The Activities of the Ranks are stated as formation, dressing, marching, wheeling, angle marching, transforming, opening and closing.

The manual will be of real service to those who wish to use a very considerable variety of tactics to increase alertness on the part of their pupils.

PRINCIPLES OF SECONDARY EDUCATION. Edited by *Paul Monroe*, Ph. D. Published by *The Macmillan Co.*, 1915. 790 pp. \$1.90.

This book is one of the best summaries of the principles of secondary education. It should be in the hands of all high school teachers of physical education, not only because of its specific sections on physical education, but because of its sound discussion of educational problems with which teachers of physical education and hygiene should be thoroughly familiar. The scope of the book is well shown by the chapter headings: Meaning and Scope of Secondary School; Historic Sketch of Secondary Education; Secondary Education in Europe; High School Systems of the United States; Organization of the High School; Private Secondary School; Psychology and Hygiene of Adolescence; Moral and Religious Education; The Vernacular; Classical Languages and Literature; Modern Languages; Natural Sciences; Mathematics; Social Sciences; Fine Arts and Music; Household Arts; Vocational Education; Hygiene and Physical Education; Athletics; Social Aspects of High School Education; Reorganization of Secondary Education.

The chapters of technical value to teachers of physical education are: Chapter VII by Guy Montrose Whipple, Ph. D., Assistant Professor of Educational Psychology, Cornell University, Psychology and Hygiene of Adolescence where a good summary of the problems of growth are given as well as the psychic, social and religious aspects of adolescence. Chapter XVIII, Hygiene and Physical Education, by Dr. Thomas A. Storey, Professor of Physical Education, College of the City of New York, and Dr. George L. Meylan, Assistant Professor of Physical Education, Columbia University. This chapter discusses the problems of personal hygiene, school hygiene and physical education. Chapter XIX is by Clark W. Hetherington, formerly of the University of Missouri, now Professor of Physical Education at the University of Wisconsin. This chapter discusses the educational value of athletics, creative forces in athletics, evils of athletics, control of athletics, and athletics in secondary schools.

MARKING SYSTEM IN THEORY AND PRACTICE. By *I. E. Finkelstein*. Published by *Warwick & York, Inc.*, Baltimore. 16mo. 88 pp. Price \$1.

With the continually increasing attention to education and the exchange of credits among educational institutions, have come during the past few years renewed interest and frequent investigations regarding the various systems of grading. This study by Finkelstein, while based upon 20,348 grades given in Cornell University, is sufficiently representative to have a general application.

The author, in this, his master's thesis, considers the relative merits of the different marking systems in vogue, passes to the theoretical considerations which underlie any organized marking system, and among his conclusions proposes the following:

1. That marks should be based upon accomplishment rather than upon performance or ability.

2. That a five-division system based upon the five qualities of accomplishments—namely, excellent, superior, medium, inferior, and very low—meets every theoretical and practical consideration.

3. That every institution of learning, at least every high school and college, adopt such a five-division system, which should in the long run not deviate appreciably from

Excellent	3 per cent.
Superior	21 per cent.
Medium	45 per cent.
Inferior	19 per cent.
Very poor ...	12 per cent.

He further suggests that in the lowest group approximately 11 per cent should be conditioned, and 1 per cent should fail.

4. That to insure the working of such a system of distribution, the grades actually given should be tabulated at stated intervals, *e.g.*, biennially, and the distribution made known so that each examiner may know to what extent he conforms to the principles upon which the system is based.

The suggestions offered above have been forcibly criticised by different writers and reviewers upon the basis of their impracticability and even upon the claim that such a mechanical arrangement would be unfair to both professor and student.—*G. B. A.*

THE WONDER OF LIFE. By *J. Arthur Thompson, M. A., LL. D.*,
Regis Professor Natural History, University of Aberdeen.
Published by *Henry Holt & Co.*, New York. xxi, 658 pp.
Price \$3.50 net.

This most interesting volume is apparently one of the American Nature Series of which nearly twenty numbers so far have been issued. Coming as it does from Professor Thompson, one of the leading biologists of the world, the book can scarcely fail to be of interest, and the very numerous illustrations in black and in color, must make it, to a layman especially, an extremely interesting one. There is a list of about 400 instances of the "wonder of life," and these might constitute almost a basis for a whole religion of nature. The seven chapters of the book are devoted respectively to Vital Motives, the Exploitation of the Earth, the Circumvention of Space, the Conquest of Time, Modes of Living Behaviour, the Intricacy of Inter-relations from Birth through Love to Death, and the Characteristics of Living Creatures. Professor Thompson, with all his knowledge of biology, is one of the numerous biological philosophers who see in life a great deal more than any conceivable mechanism could account for.

The illustrations number 100. There is an ample index of both authors and subjects. The book, although rather dear, is strongly recommended to parents of young children and to teachers of elementary natural history. Any one, child or adult, who masters its interesting contents will be already familiar with the popular foundations of biology.—*G. V. N. D.*

PHYSICAL EDUCATION. By *W. P. Welpton, B. Sc.*, Master of
Method in the University of Leeds. Published by *Warwick
& York, Inc.*, Baltimore, 1915. xvi, 271 pp. Illustrated.

Although published in England seven years ago, the material in this book is still of decided practical importance to very many in America. The range of the discussion may be best seen, perhaps, from the chapter titles: The History of Physical Education (sixty-five pages), Physical Education in Relation to Mind and Body (twenty-eight pages), The Physical Basis of Life (sixteen pages), The Nervous System (twenty-eight pages), The Education of the Nervous System (twenty-eight pages), The Organic Life of the Body (nineteen pages), Fatigue (twenty pages), Exercise and Growth of the Body (thirty-four pages).

This book is an excellent general introduction to modern physical education for the use of younger students. Unlike many English books it has an ample index, and is to be commended on that account. Like most treatises on physical education, the latter part of the book, dealing with the physiology of exercise proper, is much too general, that is, not specific enough, and includes too few physiological topics to be of the highest value. The discussion on growth, however, is of great usefulness.—*G. V. N. D.*

THE SCHOOL OF HYGIENE. By *Robert Y. Lister, M. D., Ch. B.,
B. Sc., D. P. H.*, Medical Officer, etc., for Hampshire, Eng-
land. Second edition. Published by *Warwick & York, Inc.*,
Baltimore, 1915. vi, 388 pp. Illustrated.

This volume is one of the familiar elementary treatises on school hygiene which have been so abundant of late in England and America. It has nothing special to recommend it beyond others for American use, in view particularly of the excellent ones that have now been written in this country. The book consists of three parts. Part 1 deals with the school

building; Part 2 with the scholar and physical training in the laws of health; and Part 3 with medical supervision, school medicine, and surgery. The book is made up of lecture material for teachers, but well edited into a useful book.—*G. V. N. D.*

HUMAN FOODS AND THEIR NUTRITIVE VALUE. By *Henry Snyder, B. S.* Published by *The MacMillan Co.,* New York, 1914. xvi, 362 pp. Illustrated. Price \$1.25.

This is another of the good books written by Professor Snyder out of his work at the College of Agriculture, University of Minnesota. It completes a series of text-books undertaken ten years ago, dealing with the chemistry of plant and animal life, the dairy, and soils.

It is an interesting, short, up-to-date treatise on foods for American use. The chapters deal with such topics as the general composition of foods, the changes and composition of foods during cooking and preparation, vegetable foods, fruits, flavors, extracts, sugars and syrups, confections, nuts, meats, cereals, flour, etc., while the latter part of the book deals with the relative digestibility and cost of foods. A final chapter on laboratory practice contains a great deal of practical information for the simpler chemical analysis of common foods. There is a list of 1818 review questions, a list of 100 bibliographical references, and a good index.

The volume as a whole is an adequate contribution to the education of the public in regard to diet. There are seventy-six really interesting illustrations.—*G. V. N. D.*

PSYCHOLOGY AND PARENTHOOD. By *H. Addington Bruce*, author of "The Riddle of Personality," "Scientific Mental Healing," etc. Published by *Dodd, Mead & Co.,* New York, 1915. xi, 293 pp.

In the prefix Mr. Bruce states that the chief aim of the author is to review and unify in non-technical language those foundations of moral psychology which bear especially on the laws of mental and moral growth. The timely versatility of the writer discusses here the importance of environment, suggestion and education, the spirit of genius, intensive child culture, the problem of laziness, laughter, hysteria in childhood, and the menace of fear. The mere recital thus of the chapter-topics, notably suggestion, intensive child culture, and fear, indicate in themselves the keen insight of the author into certain important educational problems for solution in the near future.

Mr. Bruce certainly is an expert in feeling the pulse of the public and has inexhaustible stores of current information along the lines which he decorates with his pen.—*G. V. N. D.*

PLAY IN EDUCATION. By *Joseph Lee.* Published by *The Macmillan Co.,* 1915. 500 pp. Price \$1.50.

This book brings together many years of study by the author on the problem of play in its relation to education. In the introduction the author says: "My aim in this book is to present a true picture of the child. All other objects are subordinate. The philosophical and biological theories adopted are important mainly as they may serve to unify the picture and make its several features easier to remember. The practical conclusions reached—though, like any conclusions upon this subject, they are important if sound—are of secondary interest: if I have succeeded in presenting the child as he really is, and if my presentation carries conviction, the right practical conclusions will be drawn by somebody. The

presentation of such correct likeness is the specific contribution that I have tried to make." The author shows a clear insight into the problems of children. The book is divided into five parts: 1. Play is Growth; 2. The Baby Age; 3. The Dramatic Age; 4. The Big Injun Age; 5. The Age of Loyalty. At the beginning he gives a series of definitions, defining the play instinct as an instinct not toward a physical satisfaction nor toward the avoidance of pain; an instinct toward an ideal; play, as action in fulfillment of a play instinct. The book should be read by all those interested in all forms of physical education including play. It will be read with profit by those who do not agree with the author's position regarding other types of physical education. The author in his chapter on play and gymnastics seems to infer that gymnastics may be in no sense a fulfillment of the play instinct. Both team games and formal gymnastics consist from one standpoint of subordination of the will of the group to the will of the leader. The author fails to recognize that tumbling, apparatus exercises, club swinging and gymnastic dancing may be entered into and are entered into by considerable groups from the play standpoint. Play is an attitude of mind toward activity rather than specific activities. It was formerly best represented by the old racial activities of running, jumping, hunting and fishing. Most of these activities have taken secondary positions, other plays having taken their place through recent development in games in the adolescent age, best illustrated by the team games like football, baseball, and basket ball, all of them of recent origin. The large voluntary classes in gymnastics by the German Turnvereins and in the Young Men's Christian Associations in this country clearly demonstrate the voluntary interest in such activities. The play life should be more largely developed. This book should stimulate the other side of activity without in any way interfering with or decreasing the number of adolescents who enjoy the team group activities or who take pleasure in tumbling or other particular forms of exercise which the author has not classified in the form of play. Play in exercise is the doing of interesting activities. With the congestion in the cities increasing difficulty is found in securing interesting activities. This book should stimulate the study of types of exercise from the standpoint of interest.

EXERCISE IN EDUCATION AND MEDICINE. Second Edition, Thoroughly Revised. By *R. Tait McKenzie, A. B., M. D.*, Professor of Physical Education, and Director of the Department, University of Pennsylvania. Octavo of 585 pages, with 478 illustrations. Published by *W. B. Saunders Company*, 1915. *Cloth, \$4 net; half morocco, \$5.50 net.*

This book, published first in July, 1909, and reprinted again in February, 1910, has now been published during the summer in a second edition. It has been largely rewritten with nine additional chapters. The book is splendidly illustrated and has a good bibliography in connection with each chapter. It is a compendium of great value in physical education. As the title suggests, the book is divided into two parts, exercise in education and exercise in medicine. Readers will be particularly interested in the enlargement of the section on physiology of exercise, with the introduction of the chapter, Physical Education by Athletics. The second part of the book, Exercise in Medicine, gives many definite suggestions regarding medical gymnastic treatment which will be of practical service to directors. This section is splendidly illustrated. In the splendid classification of athletics, games and exercises and in the classification of gymnastic apparatus exercises the author gives tables of the different types of exercises stating the chief regions of the body used; demand on nerve control; influence on pulse, blood pressure and respiration; physical

characteristics cultivated; best age for practice, in the first table; and in the second table the approximate age limit. None of the exercises listed are given as a value beyond sixty years of age. Handball is given at from sixteen to forty years. It is possible a number of the readers would draw the conclusion from these tables that the author intended men to quit exercise at sixty and to stop handball at forty. A more careful reading of the text makes clear that numbers of men are doing vigorous exercise beyond these years. The tables are very suggestive but numbers of men extend the age limit beyond those at which the author gives them.

BODILY CHANGES IN PAIN, HUNGER, FEAR AND RAGE. By *Walter B. Cannon*. Published by *D. Appleton & Company*, 1915. 311 pp. \$2.

The author has in this book many suggestions of definite use in relation to physical education. In his discussion of the organization of the visceral nerves in relation to emotions he takes up many fundamental problems related to vigorous muscular movement, particularly of the fighting and team type games. He discusses the innervation of the skeletal muscles from the central nervous system and points out that innervation of the glands and smooth muscle never comes directly through the central nervous system but through the preganglionic and postganglionic fibers popularly grouped as the sympathetic nervous system. He points out that pain and the powerful emotions like fear and rage are accompanied by a stoppage of digestion, the setting free of sugar in the body, the abolition of fatigue, the faster clotting of blood and by other fundamental changes, favorable to great feats of strength and endurance and to self-preservation in fierce struggle. His discussion of the relation of emotional changes to the fighting instincts is illuminating. He shows clearly the inadequacy of modern warfare as a means of giving natural outlet to the activities for which these emotions prepare, emphasizing the fact that modern warfare is no longer personal combat but groups of men largely fighting miles apart.

THE ORIGIN AND NATURE OF THE EMOTIONS. By *George W. Crile, M. D.* Published by *W. B. Saunders Company*, 1915. 240 pp. Cloth \$3.50.

This book should be a companion book to the one by Cannon reviewed in this issue. Both are of fundamental importance to the physical director, and should have careful study. They are among the few books that call for a careful re-reading. The author seems to infer in numbers of places in his study of the emotions that emotion, in the present civilization, without muscle action is damaging to the nervous system of the heart and kidneys. In his chapter on the kinetic system he says: "The principal organs which comprise the kinetic system are the brain, the thyroid, the adrenals, the liver and the muscles. The brain is the great central battery which drives the body; the thyroid governs the conditions favoring tissue oxidation; the adrenals govern the immediate oxidation processes; the liver fabricates and stores glycogen; and the muscles are the great converters of latent energy into heat and motion." He states in another section of the same chapter "with the rise of one degree the chemical activity of the body is increased 10 per cent." A special application of this may be made in the big muscle activities, particularly team games where body temperature rises with the work. In his conclusions he emphasizes that in the kinetic system the brain, the adrenals, the thyroid, the muscles and the liver, each constitute a link in a vital chain and that a change in any one of these links modifies proportionately the entire kinetic system which is no stronger than its weakest link. In

another place he calls the brain the battery, the adrenals the oxydizer, the liver the gasoline tank, and the muscles the furnace. In his chapter Theory of Anesthesia he throws in a paragraph regarding the bases of conduct. In this paragraph he leaves things rather in the air, inferring that moral standards are merely a matter of environment, but does not explain the adoption of new moral standards. The book is revolutionary in its outlook but is apparently based upon good physiology.

PSYCHO-PATHOLOGY OF HYSTERIA. By *Charles D. Fox, M. D.*, of Philadelphia. Published by *Richard G. Badger*, Boston. 437 pp. Price \$2.

This important contribution to abnormal psychology (devoured hungrily by the present reviewer on the beautiful seashore of Nova Scotia during the summer) deserves to attract the careful attention, not only of all psycho-pathologists and of alienists, but of conscientious academic psychologists. It can scarcely be denied that the contents of such a work should be fully known to every one who calls himself a teaching psychologist.

One dominant idea in the book amounts to a simplification, if not an occasional denial, of the extremely complex and bizarre hysterical phenomena described, for example, in the Salpetriere in Paris a generation ago. As Fox points out, it appears now that all of these strange cases were in large part the result of the unstinted but, of course, wholly unwitting and unintentional suggestion of the famous neurologists who were studying them.

Every student and professor of physical education needs the gist of the material in this volume so that he may recognize and appreciate these numerous hysterical conditions when he meets with them; and they may be found even in the gymnasia and on the playground. As Dr. Fox says in the preface, in spite of the multitudinous volumes in which certain of these hysteric symptoms and states are described, but very few English books have appeared in which the disease as a whole has been treated on the basis of the results of modern psycho-pathological researches. In the humble opinion of the present reviewer, this volume fills this lack much better than any other, although with a pleasing minimum of medical technicalities.—*G. V. N. D.*

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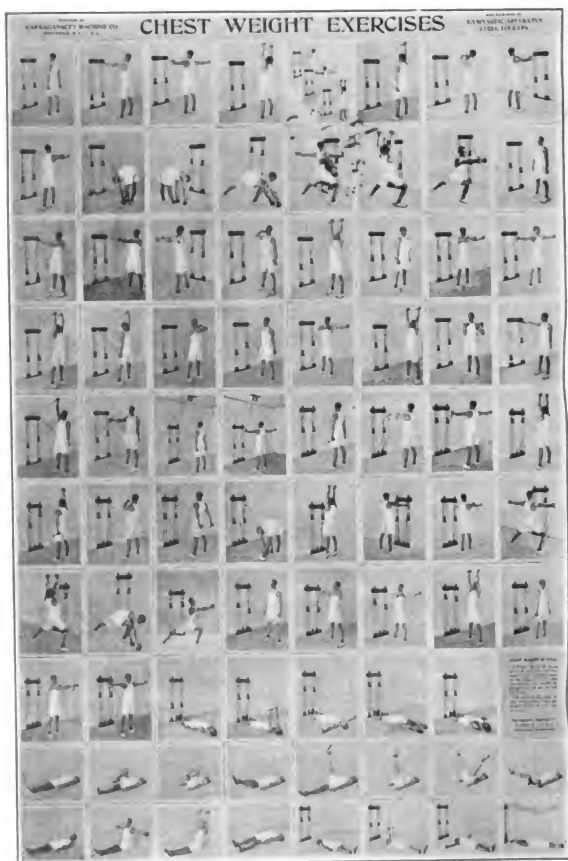
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